University of Nottingham
November 2019

“Where is the fun in eating without fat or salt?”

A qualitative study on healthcare students, foodways, and dietary advice in Mexico

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B.Sc., M.Sc.

Thesis submitted to The University of Nottingham
for the degree of Doctor of Philosophy

Abstract

Background: What to eat in order to maintain health is a controversial topic. Influences from our social context and contradictory messages affect society's views, behaviours, and practices, especially in a time and context where diseases associated with diet are increasingly threatening the quality of life globally. As a result, gaining compliance and achieving health goals in patients is a challenge for future health professionals. Current evidence on food choices is mostly quantitative and has not sufficiently addressed questions of how and why people develop 'foodways', and the significance of healthcare students (HS) foodways in practice.

Aims: This research sought to understand the influence that HS foodways have on dietary advice (DA) that is offered in primary care, especially in a country with a unique gastronomic diversity, and high rates of obesity and chronic diseases.

Data collection: As foodways' influence on dietary advice is an unexplored topic, a qualitative study underpinned by critical realism (CR) was conducted in Mexico. Observation of the food environment was carried on. Food diaries or 24-hour-recalls were collected, and 3 focus group interviews and 21 individual interviews conducted. These were transcribed verbatim, coded and analysed.

Findings: Five main categories emerged from the thematic analysis framed by CR: food culture, gender, a cultural system, professional identity, and power issues. Most of these categories were rooting their grounds in a critical dietetics' framework. HS described various influences on their foodways, which were mainly structural (from their social and cultural environment) and related to their professional and lay knowledge and the way in which they negotiated their professional identity. Additionally, social representations of foodways and health influence importantly their patients' compliance with the offered DA. There were gaps in HS' professional knowledge, and authoritative attitudes highlight moral connotations on patients' dietary behaviours were shown. The evidence suggested that HS hold stereotyped and biased views on food, obesity, and health, which becomes an important influence in offering DA. HS' way of addressing diet discourages consumption of Mexican traditional food, regardless of whether they consume this. Additionally, hierarchies between students and professionals, and amongst healthcare professions, influence how DA is offered and affect professionals' credibility with patients.

Conclusions: New approaches are essential to address the cultural and social aspects of nutrition and diet in healthcare curricula. Health policies should encourage a more compassionate and comprehensive approach to dietary health, which showed an influence by moral, social and cultural aspects within a Mexican environment.

Acknowledgements

I dedicate this thesis to my parents who I love and respect. Without their care, visits, words, warmth, and love, I simply would not be finishing this journey. I thank especially the following people:

The National Council for Science and Technology in Mexico (CONACyT for its Spanish acronym) and the Public Education Ministry in Mexico for funding and supporting this study. The University of Nottingham for supporting my learning, my research, and my career aspirations.

My supervisors Dr Stuart Nairn, Dr Nichola Ashby, and Dr Fiona Moffatt; who always offered their academic advice but also personal support when this was necessary. Thank you for continuing with the supervision work on a voluntary basis and for your patience, motivation (even when I did not believe in myself) and great knowledge.

A number of people have supported me outside the direct academic production of this thesis, and I am very grateful for their support. Dr Rodney Reynolds, who always welcomed my visits and calls with a smile and a friendly face. Dr Alison Edgley who gave me useful insights into the taught module I undertook with her and who supported me while being an international student doing a challenging PhD journey. My former line manager, Dr Victoria Sedman, who trusted and supported me through a placement that shaped my personality and my professional skills towards a promising career.

All my friends and family in Mexico who gave me nothing but support and encouragement on the distance through this stage in my life. I cannot thank you enough for your patience, affection, and warmth.

All the friendships that were born in Nottingham and the people that passed my life in one way or another, always making me smile, laugh and enjoy even in dark, rainy and gloomy days. Especial thanks to Daniela, Snigdha, Matt, Fabio, Emily, Rebecca and Becky, who offered valuable insights in moments where I could not see with enough clarity.

I am grateful to all the people that participated in my study for their time and unselfish effort to share their experiences with me. To the researchers in Mexico (particularly to Dr Luis Vargas) who were interested in sharing their ideas and helped me to strengthen my work.

Abbreviations

CD	Critical Dietetics
CR	Critical Realism
CVD	Cardiovascular disease (s)
DA	Dietary Advice
DNG	Dietary National Guidelines
FGI	Focus Group Interview (s)
GP	General Practitioner
HS	Healthcare Students
ID	Interpretive Description
II	Individual Interviews
LR	Literature Review
MVS	Maximum Variation Sampling
NRD	Nutrition Related Disease (see methodology for rationale)
PAHO	Pan-American Health Organisation
PPr	Patient-Practitioner relationship
SES	Socioeconomic Status
WHO	World Health Organisation

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Chapter 1 Introduction and Study Background

The quote in the title of this thesis was mentioned by one of the participants in this study. She was a medical student with a nutrition-related disease (NRD) and was struggling with her way of eating and what health professionals (HP) were advising her to eat. Her words reflect one of the central aspects of this thesis. For her, eating without salt or fat, or in other words, taking the flavour out of food, was boring, thus highlighting the tension between personal desires and dietary advice.

1.1 Foodways and dietary advice

Food is a cultural expression (Benavides, 2016) that has meanings, influences, and symbols (Goody, 1982) attached to it, and is also a reflection of the organisation of society (Counihan, 1999; Lutz, 2016). Additional to the relationship between food and convenience, cost, and availability (Phan & Chambers, 2016), food is also bounded to biopsychosocial motivations (Colby, 2013). Foodways is a concept related to food, but one that emerged from the academic literature, and it has been used for a popular description of how what and why human beings eat as they do (De la Pena & Lawrance, 2011; Lutz, 2016) considering societal differences (Goody, 1982).

Human health cannot be sustained without eating, as it is essential for human nutrition. Eating does not only implies taking food to the mouth (which is called feeding) but is bonded with social dynamics (Pollan, 2008), for instance when traditional cuisines have been framed by food morality (Goody, 1982), which condemns “unhealthy” food choices. Indeed, food attached to health can be controversial and a life concern (Burns, 2016) especially when diet and weight reduction are advised for improving people’s health (Rozin et al., 2003), and due to the concerning high rates of chronic diseases related to eating (Bertran, 2010). People with obesity have been considered deviant (Maurer & Sobal, 1995) and society may be prejudiced against them because of the rationale of moving towards a “thin” and “skinny” body as a sign of health, but also towards self-control with regards to eating (Vigarello, 2013). Moreover, institutions such as media, social environment; and healthcare practitioners (justifying a scientific view) have been pointed out as reproducers of contradictory health messages (Rojas-Rojas, 2016) and stigmatising practices, mainly amongst patients with chronic diseases (Browne et al., 2016).

The healthcare focus in many places around the globe, but also in Mexico, has been to treat diseases rather than preventing them (Helman, 2007). It also assesses patients from a reductionist point of view (i.e. a biomedical approach), especially when it comes to taking care of dietary health, missing wider factors at work that might support these individual views (Adamski et al., 2018). Currently, medical doctors, nurses, and dieticians are the appointed staff to address dietary issues with patients (NOM-008, 2017). Lifestyle and health practices of patients, including the basic need for eating, are influential factors for obesity and other chronic diseases (Burns, 2016; Dennet, 2019) and this seems to be a conflict because of Mexico's cultural and gastronomic diversity. In Mexico, there seems to exist almost an unlimited offer of prepared food in the streets, markets, and locals (Bertran, 2015). The way in which Mexicans eat has been identified as one of the major causes of the high (70%) prevalence of people who are overweight or obese in this country (OMENT, 2017).

This initial overview was the rationale for the aim of this research, which was to understand the influence that foodways of healthcare students (henceforth HS) had on the dietary advice (henceforth DA) they offered. With Mexico's background, it was necessary to have a comprehensive understanding of the current situation through mechanisms, barriers, and motivations in action in order to obtain rich data, a qualitative study was designed. The objective was to enhance healthcare practices by highlighting implicit mechanisms between what HS eat and what they recommend with regards to diet.

1.2 My interest and experience

My interest in how food affects health started when I studied Dietetics and Human Nutrition. I have had many experiences and encounters with patients. I started to ask myself some variants of my research questions when I felt surprised by the idea of patients following advice from other sources, spending a lot of money in "fast" treatments to lose weight, or for their diabetes. I wondered why they were not compliant with what professionals said. I reasoned that an answer might be related to the desperation, impatience, annoyance, pain, and bureaucracy that I perceived when I visited primary care clinics. Most of the times though, I have been in clinics as a health professional, on the other side of the waiting room, and then I could see doctors' expressions of tiredness, nurses drinking a coffee and chatting, and the nutrition service half empty because patients miss their appointment as this did not viewed as important as getting their medication from their general practitioner (GP). Both sides, healthcare professionals (HP) and patients do not need to be in such tension. I thought that the problem must have other strands that I was missing. Then my interest in a clinical approach, which considers, for instance, nutritional properties of food (Camp, 1982) and

ways of assessing patients' nutritional status, changed. I was more curious to understand the social, anthropological, historical and economic aspects of our foodways and the way we respond to health and disease in our daily lives. These aspects have a major influence on foodways and diet (Burns, 2016; Herbold & Geagan, 2002). The present investigation is original since I wanted to draw upon sociological and anthropological ideas to broaden my existing clinical knowledge, that did not take these broader issues into account. Thus, this study made sense, especially for addressing a problem in a country such as Mexico, where I know that nutritious food can be obtained at affordable prices and with a tasty flavour. My background experience as a dietician and my role as a lecturer of HS added valuable insights into the development of my research questions. Nonetheless, this experience was to develop and change as I engaged with my topic, designed the study and triggered the reflective process that happened throughout this research. It was because this is a qualitative work that I could see a bigger picture than I originally conceived. One of my personal purposes and motivations when starting this research, was to raise awareness, among HS, of the importance of congruence and of following healthy diets themselves whilst advising patients. I wanted to stress how healthiness in food is overrated and teach them to educate their patients according to the Mexican context. Of course, this view changed throughout the research. When carrying on the methods I proposed, I realised that being a clinician afforded me a first-hand understanding of the social world of clinical practice (Nairn et al., 2012). This allowed me to design a comprehensive interview guide that would cover the aspects of the PPr that could help me answer my questions. On the other hand, being an insider made it more challenging for me to distance myself from what I believed important in a clinical interaction, such as cultural and religious aspects. Acknowledging personal interests and experiences is essential in any research. Now the presentation and order of this research will be briefly explained.

1.3 Description of chapters

Chapter One describes the study background and foregrounds social, normative, cultural and health-related accounts that have been associated with dietary health. It unpacks the current health situation in Mexico and relates it with food and eating transition patterns that shape what is currently considered as dietary guidelines to improve health and how this is learned, adapted and delivered by healthcare practitioners.

Chapter Two presents the existent empirical evidence on the topic. Most studies that emerged from the search strategy were quantitative and although they provided information such as barriers to providing DA, (self-confidence, self-efficacy, credibility), they did not

explain sufficiently how or why these mechanisms were happening. Additionally, Mexican evidence was insufficient, and some authors suggested qualitative approaches to learn more about motivations, causal mechanisms and additional explanations for the rise of diseases related to diet.

Chapter Three contains the methodological strategy that emerged from a critical realist epistemology. This takes into account and indeed, considers essential the context in which the research was developed, starting from the social and cultural aspects that surrounded the selected settings and continuing with the type of information HS learned and transmitted (and in which ways) to their patients. This was explored through various methodological tools that are explained with a rationale on how they could work for the specific setting and participants. This chapter is a crucial section as it carefully explains the strategy supporting the analysis of the obtained data. Considerations for ethics and the robustness of this research were also described in this chapter.

Chapter Four includes the data elements describing in breadth the salient aspects of HS foodways. One element was related to the food recalls that allowed a better understanding of HS routine regarding eating, the other was the observation conducted during the fieldwork which permitted a contextual snapshot of the setting.

Chapter Five is the first findings chapter that shows data obtained from the combination of focus group interviews (FGI) and individual interviews (II). Various themes related to social and cultural factors, gender and economy were elucidated and illustrated by quotes; and structural mechanisms were reported (orally and in writing) by HS as influences on their foodways. Regarding DA, this chapter shows the way in which HS negotiate this process with both the lay knowledge they bring to their educational context and the professional knowledge they acquire. Various moral, ethical and social representations underpinned the way in which HS counsel on diet. Some attributes that patients bring, such as culture (considered a salient category), affect the professional-patient relationship (PPr), and this chapter explains how.

Chapter Six links the two first findings chapters and describes data related to credibility and congruency between having the “healthy” foodways that HS said they wished patients had and following their own advice themselves. Some power and hierarchical issues were also evidenced, amongst disciplines and between students and professionals, but also in the case of patient-practitioner interactions. HS’ social environment, as well as taxing curricula, serve as a rationale for them to behave in a way that seems incongruent with what they should

promote. Current dominant hierarchies define their roles and responsibilities with patients and for this, medics have tried to refer patients to dieticians, nurses have empathised with patients and dieticians were constantly seeking to validate their knowledge, by discarding social representations about them, and about dieting and food.

Chapter Seven builds up a bridge to discuss all three findings chapters, describing the five categories that finally became evident after a deep and encompassing the data analysis within a critical realist lens. The framework of critical dietetics comprised various aspects of each category, especially food culture, intimately related to gender, and a cultural system, which framed foodways but also DA. Power and professional identity were the final two categories that explained the influence that HS foodways had on DA. There were two particular theorists that supported most findings and, in this way, the data collected was contrasted with theoretical tenets to make sense of the research relationship.

Chapter Eight brings together all data and discusses how the findings can serve to improve healthcare practice, influencing various levels of action, from global, structural, group and individual. The implications for practice, arguments for rigour along with the strengths and weaknesses of this research, recommendations for future practice and key conclusions are included in this final part.

Moving on, it is essential to know the context and background of the relevant theoretical aspects related to the studied phenomenon. This chapter draws upon the theoretical and background information that surrounds the current research. Firstly, the research is placed in Mexico's context. Secondly, it is essential to highlight definitions and terms related to food, eating practices and health. Finally, some figures and background about the healthcare system, the regulatory framework and the current state of health in Mexico will be explained.

1.4 Mexico's context

Mexico City (See Appendix 1) is the place that has the highest density per km^2 in Mexico. Almost 10% of the total Mexican population lives there. Rural to urban migration increased in 1940. Additionally, urbanisation prevails in more than 80% of the Mexican territory, which has brought an increase in the demography. Consequently, public health has been affected due to a lack of capacity within the State to provide enough resources to services and leading to an over-demand with a high demand vs staffing ratio (Bertran, 2016). The economic gap is wide within Mexico. The richest people in Mexico control 35-45% of the gross national product (GNP) and the poorest live with a distribution of only 2% amongst

them. The political system is a democracy and a neoliberal ideology is promoted although it has resulted in major crisis and inequality amongst its citizens (Otero, 2018). Although the World Bank considers Mexico as an upper-middle income country (WB, 2017), health and diet have been the unequal income distribution, which has worsened since 2001. The purchasing power has decreased regarding food and beverages (Moreno-Altamirano, 2018), and social issues have restricted access to healthcare services, especially in older adults (Fernández-Niño et al., 2014).

Recent trends indicate that food availability in Mexico has changed as a result of the increasing urbanisation and globalisation (Bertran, 2010). It was believed that market forces could help with the country's progress and positive wellbeing, and Mexico had a full market or commercial openness after the economic crisis in 1982. However, agriculture and its production in the countryside were neglected resulting in high agricultural imports. Although the most consumed food is corn and its different variations, Mexico now depends on other countries for the importation of corn, bean and wheat crops (Moreno-Altamirano, 2018) due to the lack of attention that self-production has received. Recent surveys have shown that the main component of the Mexican diet, which contributes significantly to calorie intake, are cereals (tortillas and corn products mainly), followed by foods high in calories and low nutritional value and animal sources of protein (Barquera, 2018). Traditionally, three main meals are eaten, being the one at midday the most common and basic (Bertran, 2015). Almost 50% of Mexicans eat out at least once a week (Bonvecchio-Arenas, 2015). Currently, small grocery shops are the predominant (70%) food sellers in Mexico, followed by supermarkets and public/street markets in which street food vendors purchase their ingredients. There is an increasing expansion of "fast" food stands/locals (Hernandez Fernandez in Barquera, 2018), as well as a growth of dairy and pastries industrial production (Vargas & Casillas, 1992). Food street vendors in Mexico sell affordable, nutritious, convenient and traditional food to customers. Additional food is offered during religious fiestas and civic fairs, which is also based in Mexican traditional ingredients (Long-solis, 2007). From the findings section, un-translatable words (that describe Mexican food) were highlighted in italics so that the reader can recognise that these words have a definition in the glossary of Mexican food (Appendix 2). The following section describes the association between health and food in a contextual and theoretical framework.

1.5 Theoretical framework

1.5.1 Food, health and related terms

Food and diet are part of a vast topic only related to human nutrition. Eating is one of the essential mechanisms in human beings, a biological need (Helman, 2000) and it depends on culture as well (Pollan, 2008). Therefore, various terms related to eating and health (e.g. diet, nourishing), as well as other supporting terminology for this research are explained in the section below.

Investigating food is a continuing concern, as this is not only essential for human life, but also a cause of worries, pleasure, stress, and beliefs (Rozin, Bauer, and Catanese, 2003). What people eat is influenced by the social organisation and cultural values of the broader society (Counihan, 1999). Each social group has its unique foodways, which according to Counihan (1999; 6) are: "behaviours and beliefs surrounding the production, distribution, and consumption of food". The term "foodways" can strongly provide evidence about people's history and culture since food is a shaper of the person within the family and the social group where they belong (Counihan, 1999). The process of preparing food has various associations with gender and social hierarchies (Pilcher, 2017).

The word "foodways", although not well-known or used, fits within the context of this thesis, which aimed to explore the social, cultural and economic dynamic that interweaved between healthcare students that will become patient advisors on what, when and how to eat food. The term "alimentación" was defined according to Bourges et al., (2007), who belonged to the Mexican National Nutrition Institute. "Alimentación" refers to the biological, psychological, ecological and sociocultural processes that encompass the collection, distribution, conditioning, preparation and consumption of food, habitually transformed in dishes, meals, and beverages, from which each person obtains the required nutrients, as well as physiological, emotional, aesthetic and intellectual satisfaction, common to humans and contributors to achieve a full life. The concept of alimentación points to the uses and customs of a cultural system in certain social groups; therefore, it is not determined individually nor as a behaviour. The term alimentación is a word in Spanish that does not have an appropriate connotation to English (which is alimentation). Thus, for the purpose of the thesis, it will be used throughout the document without quotation marks.

A similar term is foodways, which includes the expressions derived with alimentación, and is related with the answers of when and with whom alimentación is shared, as well as how and

why foods are prepared/consumed in specific ways (Bertran, 2010). Foodways also encompasses social systems that are relevant to human relationships (Benavides-Vaello and Brown, 2016). This involves counselling practices that HS are taught to offer on alimentación. Dietary advice is the action of providing specific recommendations regarding a person's alimentación in health-disease contexts. The term foodways was first used in the 1980's under anthropology studies' umbrella (Camp, 1982); then, it was taken both for anthropological and social disciplines. Acknowledging foodways' symbols specific to a culture might strengthen nutritional counselling (Jones, 2007). Foodways are socially constructed and therefore constrained by economy, culture, politics and social life (Biltekoff, 2012; Ver, 2016). Nutrition sciences, on the other hand, emerged from the chemical aspects of food and how these interact with the body before, during, and after digestion. These measurable variables (Yates-Doer, 2013) allow understanding of the interaction between food and diseases. The process of selecting food, however, requires another type of skill and determination (Brooks et al., 2013).

The term diet tends to erase the cultural and social domains, whereas diet-related health behaviour refers to the "correct" food selection process according to people's rational and objective health beliefs (Cohn, 2016). The term diet, however, does not imply any judgments about diet characteristics, but it is often used for weight loss programmes and to refer to a dietary regime for ill patients (e.g. renal diet, soft diet, liquid diet). Currently, the concept of diet refers to the set of foods and dishes that are consumed in a day (Alvarez-Rivero et al, 2017). Previous research conducted in different cultural backgrounds has reported that food is closely related to concepts of physical health. Hence, wellbeing has been linked to food even more (Ares, 2016). Quantity and quality of food can be problematic for human health and widespread information on social media, science, and industry, only increases anxiety to consumers (Maurer & Sobal, 1995). Some authors have positioned in defence of natural foods over processed ones, which have to try enhancing the body functioning or serve as "fuel", but that can also cause diseases (Pollan, 2008). The focus for changing dietary behaviours has been through people individually making the "right" decisions according to rational and objective health beliefs (Cohn, 2016). Health behaviour, however, holds an intimate relationship between agents and should also consider changes at micro, meso, and macro contextual levels of health (Dover & Lambert, 2016).

The relationship between food and health seems to be a trending concern amongst people. The word "healthy" attached to food or to an eating behaviour (i.e. healthy food or healthy eating) needs to be underpinned by a context in order to understand its meaning for the person who is referring to that term. Therefore, in some respects, "healthy" can be used

interchangeably with "nutritious" (Schaefer, 2016). For instance, there is the perception that dietary fat is detrimental or "unhealthy" when dieting, especially amongst women (Oakes & Slutterback, 2001). Dietary health will be used as a synonym of nutritional health, since the word dietary, at least from its semantic in Spanish, means "that belongs to diet", and in this sense, the most used terminology to define the interaction between nutrients and health is often referred to nutritional health (Perez-Lizaur, 2018). Healthiness of food is part of people's views and beliefs, and it also determines food choices based on the ingredients that define healthiness (Bucher, 2015). It is a feature whose use has increased since more attention has been paid to the relationship between health and food. However, food preparation and, at the same time, food healthiness may vary (Bucher, 2015; Provencher, 2009). For example, in Latin populations, maintaining a traditional Hispanic food culture that contains a broad variety of vegetables and fruits in broad variety has been recommended wherever possible as they are associated with healthiness (Lee, 2016). The following section describes in more detail how culture, history, and social systems have affected the food-health link. A brief historical explanation of nutrition science and how this has been utilised is the starting point.

1.5.2 Cultural and historical accounts

1.5.2.1 Nutrition science

The concept of nutrition should imply a nourishing effect for the one who consumes food. However, health claims attributed to food can contradict that idea (Pollan, 2008). For the past two decades, diet and health issues have been strongly medicalised, and have been based mostly on biological and psychological principles. Nutrition training's influence has been significant (Beardsworth, 2002; Lupton, 1997). Nutritional sciences, through this medicalisation, seem to represent an ideological instrument that supports a Mediterranean approach to health and diet (Pio, 2015). The paradigm "Negative nutrition" makes evident a growing anxiety around diet and eating right, but also the moral connotations that have been attached to food and diet, narrowing perceptions of food to a "good and bad" dichotomy (Biltekoff, 2012) and highlighting doctors as having moral authority regarding food and eating practices (Lupton, 1997). It has been documented that the food industry often hires academic experts in nutrition to avoid spreading strong views or opposing information to industry's interests, hence this could present an ongoing tension amongst diet experts (Nestle, 2013). In the US it has been documented that scientists were paid to discredit studies against sugar (O'Connor, 2016). Currently, conferences (Federation of Asian Nutrition Societies,

2019) include a persistent message that defends industrial products, for instance, milk substitutes instead of breastfeeding.

Geographic, historical, demographic and normative framework factors play an important role in eating practices (Rozin, 2003). Some debates around the consumption of meat, for instance, started developing since the 18th century. In the 19th century, the idea of calories emerged, given Lavoisier's experiments (Vigarello, 2013). Dieticians actually were against vegetarianism at the beginning of the 20th century and yet nutrition studies kept focusing on energy needs and caloric intake (Pio, 2013). Although in the 19th century a fat person was associated with wealth, strength and affluence, at the beginning of the 20th century, obesity was considered to be a monstrosity (Vigarello, 2013) and a major health risk (Pilcher, 2017). At the end of the 19th century, diet and exercise recommendations started to become key strategies for the treatment of obesity. Some anthropometric indexes (i.e. body mass index) were proposed to classify obesity and ranges were set to categorise a person as being underweight, normal weight, overweight or obese. Scientific exploration allowed us to understand the causes of obesity, distancing at the same time from popular wisdom around fat people (Vigarello, 2013). Eating disorders as responses to a growing discourse of thinness seemed to create a specific anxiety that has been linked to the development of obesity (Fox and Egan, 2017). Moreover, a movement that promoted slimness and a market full of options to tackle obesity, had a major rise many years ago (Vigarello, 2013) and it is still being reproduced (Texeira, 2010). At the same time, thinness assigns a social hierarchy, allowing the inordinate rates of eating disorders (Maurer & Sobal, 1995).

It was not until the middle of the 20th century that the process of medicalising obesity (i.e. treating obesity as a medical issue/condition) began to rise, leading to the creation of journal organisational activities, guidelines development, clinics, and official reports and statements in media. Currently, obesity is considered a major contributor to other chronic diseases involving metabolism, heart and musculoskeletal tissues. The medicalisation of fatness and the consideration of obesity as a disease have been increasing; consequently, a scattering bias was drawn by mass media. Rather than indicating objective nutritional facts, dietary ideals represent social ideas intimately related to the morality of food and to ideological and cultural content that is being attempted to detach from the concept of dietary health (Biltekoff, 2012).

Before 1960, in a great part of the American continent, health policies were targeted at encouraging people to eat more to avoid undernutrition and nutrient deficiencies (Nestle, 2013). At the same time, there was an expansion of the food industry and improvements

were made to preserve, store and distribute food (Nestle, 2013). Huge investments were made by industries to generate mass publicity to ensure the consumption of their products (Pilcher, 2005). From there, Nutrition Science was framed on a caloric paradigm, where nutrients were highlighted to maintain human health and later, a negative nutrition paradigm emerged. Food was divided in groups depending on its nutrients and caloric contents. Between 1969 and 1990, consumers were alerted to health issues such as chronic diseases and, therefore, food started to be categorised as good/bad. This translated into sensible or unwise food choices, but an emphasis was placed on reducing portions and eating less fat (especially from animals), salt and sugar (Nestle, 2013). In the case of Mexico, it was in the first half of the twentieth century that nutrition studies were oriented almost exclusively to caloric factors relevant to human health (Pio, 2013). The complex aspects that surround diet, however, cannot be so simply categorised into measurable categories (Abbots & Lavis, 2016).

With regards to the Mexican context, the constantly shaped gastronomy has been associated with health and disease from a policy perspective. Although the most important ingredients in the pre-Hispanic stage still prevail with certain changes, the modern diet has integrated more industrialised food (or products), which was triggered after the Free Market Treaty (TLC for its acronym in Spanish) with other countries (Clark et al., 2012). The urbanisation, the migration from countryside to cities, as well as the progressive change of dietary patterns, have been pointed out as the fundamental causes of the obesity epidemic in Mexico, which then complicates into metabolic and cardiovascular issues. From this perspective, health education and promotion should aim at addressing patients' issues from this comprehensive perspective that is aligned with these social and cultural changes (Gomez-Delgado, 2019).

Some changes in dietary patterns have been reflected through street food vendors, eating out and commensality modifications. A survey of Mexican food stands reported that the most popular sold food was traditional Mexican food (Long-Solis, 2007). It has also been reported that the majority of Mexicans eat out at least once a week, although driven by price and consistent with the rapid growth of fast food (Hernandez in Barquera, 2018), defined as foods dense in calories but with poor nutritional content (Long-Solis, 2007). Even when families struggle to eat together during the week, food has been strongly associated with social practices and commensality (Alkon, 2016). Commensality has been a strong characteristic in the Mexican food environment (Rodriguez-Arauz et al, 2016). With commensality, values of brotherhood and community are established and reinforced (Goody, 1982). The following section explores the morality and ethics of food.

1.5.3 Normative, moral, ethical and ideological of food-health

Perceptions of food healthiness are influenced by the virtues, combinations or vices of certain foods (Bucher, 2015). An attitude is a positive or negative feeling about a person, object or situation (Petty, 2018). Belief, on the other hand, is the information that a person holds on another situation, which can be factual or only as a point of view (Petty, 2018). Attitudes are affected by knowledge and behaviours, but at the same time, knowledge can also have an impact on behaviours. For instance, a behaviour involving selection of food is determined by their attitude towards how people think this behaviour will affect their life but is also affected by people's perception of subjective norms around food or commensality. This model has been mostly used for psychological studies of food choices/selection (Ashwell, 1990). A stereotype is a general belief, an overgeneralisation based on a premise that is not necessarily representing all perceptions but an overall view to describe something, often in a judgemental way (Ashmore & Del Boca, 1981). It denotes resistance to factual evidence and in this way oversimplifies a belief. Motivations are related to perusing goals and objectives, and this partially underlies behaviour (Gross, 2015). Normative beliefs added to motivation to comply are translated as subjective norms that cause certain behaviour along with its attitudes. Not only do personal values, emotions, habits, physiology and personal norms affect food acceptance or how an individual perceives an eating occasion, but they also affect food attributes and cultural norms. Additionally, the status of certain foods affect food acceptance as well (Ashwell, 1990).

There has been a growing tendency to categorise food according to health standards of what is considered nutritious and beneficial (Garine, 2001). In terms of the current medical and nutritional discourses, there is a tendency to dichotomise food patterns, and there are also ethical concerns and social dynamics related to how we acquire and consume them. The "bad" (unhealthy) food choices show moral weakness and lack of personal control (Davison, 1991), while the "good" food is nourishing and appropriate (Chen, 2016; Schaefer, 2016), and at the same time uphold social hierarchies (Biltekoff, 2012). However, "good" food is not always equivalent to being tasty (Schaefer, 2016). Critical nutrition or critical dietetics seeks to trigger reflection and a compassionate approach to our own bodies (Brady et al., 2013) since rather than focusing on nutrition as an objective science, it focusses on understanding political, ideological and moral influences (Biltekoff, 2012). Some argue the need to rethink the so-called "objectivity" of nutritional facts (Lupton, 1997). Furthermore, moral, social and cultural mechanisms are an important component of how people make sense (Menell et al., 1992) of, in this case, DA. In addition, medical practice and its healthcare disciplines are also shaped by values and norms, and not only biological systems (Luke, 2007).

Currently, the way of addressing obesity has been through HP. They are agents that reproduce institutions with their practices (Archer, 2005) by applying this healthcare knowledge with patients. However, nutrition messages and dietary guidelines lack clarity (Beardsworth, 2002) and this might be part of the hidden agenda for nutrition students that diminishes food symbolisms (Pollan, 2008) and conceptualise nutrients as fuel for a machine. In addition to allopathy, alternative medicine and hydrotherapy have aimed to tackle this epidemic (Vigarello, 2013). Some political movements have sought to de-medicalise obesity because they think it is being used to promote certain medical models and to increase profits of pharmaceutical companies that sell drugs and treatments for weight control (Maurer, 1995). Instead of focusing on research that can add evidence to the risks of sugar product consumption, the industry has favoured research that has identified fat, and its products, as a risk factor (Rivera-Dommarco et al., 2018). Some well-known institutes that promote health (the American Heart Association, the American Cancer Society) are sponsored by the pharmaceutical and food industry but also by the medical devices' industry (Castro, 2014). However, the numerous myriads of treatments for obesity leave less certainty about which are the most accurate. Indeed, the most recognised Mexican guidelines on food content and nutrition were funded by the food industry and include nutritional information of this industry's packaged foods (Calvillo & Szekely, 2018), which represents a conflict of interest (Rivera-Dommarco et al., 2018).

Healthcare and medicine agendas, then, are shifted towards financial or vested interests aligned with the dominant agenda of healthcare (Ioannidis, 2016). Therefore, there is a growing commodification of healthcare that shapes the way that healthcare is delivered (Goodman, 2016). This can also bring consequently a loss of cultural autonomy (Lindee et al., 2003). This goes hand by hand with an increase of self-care literature, as well as an emphasis for self-conscious and self-confidence as a way of opening opportunities to improve as a person (Vigarello, 2013). Institutions and social environments provide an arena for agents to interact and make food choices. That is not to say that addressing inequalities that underline individual behaviours should be a priority for food and health problems (Brooks, 2013; Dover & Lambert, 2016). Additionally, since the start of the slimness movement, stigmatisation has been the main problem of people with obesity (Vigarello, 2013). Moral models might have decreased from the medicalisation of obesity but the clash with the way of delivering dietary advice keeps portraying this in healthcare (Maurer, 1995). There have been other structures, manifested as industries, related to food and health, which influence dietary patterns and how this duality is often presented to the public.

1.5.4 Food and health industries

The focus of nutrition sciences has been quantitative, thus establishing values and cut off points to diagnose diseases such as obesity and address dietary issues. However, this fails to acknowledge the complexity of dietary choices and the convoluted relationship between food and health. By announcing concerns about consumers' health, the food industry then adapts and designs foods and ingredients to promote health; hence, they intend the kitchen cabinet to act as a medicine cabinet (Biltekoff, 2012). The food industry has started promoting a range of food options, such as traditional, alternative, gourmet and "light", which has had a major impact on people's food choices (Lutz, 2016). Dieting has become a new way of commodifying goods and services that respond to the problem of excessive eating (Maurer & Sobal, 1995). The food industry makes consumers believe their claims by using marketing tricks and by offering simplistic nutritional advice, such as "less fat and calories" and so on (Yates-Doer, 2013).

Common practices in the food industry include demonising certain types of non-industrialised food (Gofton, 1991) or promoting a battle against fat and cholesterol. There has also been evidence though that funding to scientific research comes from the food industry and therefore a conflict of interest can exist (Nestle, 2013). As consumers get anxious and fear some products, there has been a response to these unregulated industry practices. In the United States, there are precedents of how food and fast food franchises have been penalised due to promoting obesity, and in France, food publicity has been restricted (Vigarello, 2013).

Publicity in Mexico City, on the other hand, puts more pressure on women to be healthy and assigns "health" attributes under supposedly scientific rationale that confuses consumers (Bertran, 2015). Healthy choices are framed as if it was easy or straightforward to make them (Davidson, 1991). Freedom of choice is challenged given that consumers face pressures from the food industry as well as health policy (Brooks et al, 2013). Having too much information on food healthfulness, however, can be counterproductive in triggering a reflection when trying to select healthy foods (Oakes, 2001).In Mexico, there is a contradictory relationship between publicity in television and the rising rates of diabetes, as the publicity targeted to children decreased but the rates of this disease did not (Rojas-Rojas, 2016). Although Mexico's government urged the industry to take additional actions about junk food publicity, no concrete action or course of action was taken to secure or show real commitment to regulate or compromise more specifically (Bertran, 2015).

As shown in these latter sections, food and its relationship with health has been regulated through different macro structures that contain and release contradictory messages, ethical concerns, and moral connotations. All of this has supported a medicalisation of nutrition-related issues that have triggered some alarms worldwide and has assigned the various ways of addressing these problems to a healthcare structure. These practices or ways are explained in the following section.

1.6 Dietary health and Professionalisation

What is a professional? This question has been subjected to various debates. The term can be used if a job is properly conducted (by a professional), or when there is a specific ethical and moral code of conduct for a specific (professional) job, and when an expert opinion is offered. Nonetheless, the most known use is when occupational groups are recognised. Historically, for instance, nursing has been considered a profession (Abbot & Meerabeu, 1998).

A consultation is a professional relationship where patients voluntarily seek advice and that is time limited (Kaslow, 1977). Within this dynamic, patients' culture has a major influence on patients' satisfaction with their physician and this is later translated into better outcomes (Ong, 1995). Within the field of nursing, the nurse-patient relationship has a central place and within this, there is a historical consideration that flexibility should have a place in this relationship, especially considering contextual factors (Allen, 1998). There have been different approaches that healthcare professionals use in consultations. Some models have been doctor-centred and effectively dominant such as the one documented by Balint (1961), others patient-centred such as the one Hellman - who was a medical anthropologist - proposed (Pendleton et al., 2003), which encourages responsibility on patients involving patients within an empathetic relationship. These are the most salient theories that talk about preventive counselling practices (Pawlikoska et al., 2007).

Some consultation models are more or less interactive or cooperative, but these are mostly paternalistic and doctor-centred (Kaba & Sooriakmaran, 2007), in which compliance – often with a submissive attitude - from patients is expected. Insistence to patients on the other side has been counterproductive to promote adherence (Larkan at al., 2015). Nonetheless, empathy is a key element to promote goal achievement from patients. The use of appropriate language (avoiding jargon) and actively seeking feedback from patients have been key components of a consultation (Pawlikoska et al., 2007).

Nutrition education is the transmission of knowledge in nutrition to future professionals (Alvarez et al., 2017). Dietary advice involves the use of counselling practices on alimentación that HS learn. It is the action of offering specific recommendations for a person's alimentación, in health-disease contexts. Central to DA, specialists in food and alimentación stand out to deal with nutrition and dietary issues and address these with patients in an understandable language (Gable & Herman, 2015). They often act as a moral authority for indicating patients what to do improving or maintaining a healthy state of health (Tomas-Sabado, 2010). They go beyond recommendations based purely on nutrient's food contents, and draw upon moral aspects of food consumption, which dichotomises food; in this way, only the expert on dietetics can advise on what should or should not be eaten (De Garine, 2001). However, many of the tools they use are related to psychological theories for changing health behaviour, especially for patients with obesity and diabetes, for whom they have weight loss control treatments, not often followed by patients. Apparently, dieticians are trained with communication methods with higher control, such as an instructing or directive method, rather than counselling or discussions (Gable & Herman, 2015).

Having presented a brief overview of how dietary health is addressed from a professional stance, it is fundamental to present the general glance of how involved structures in healthcare in Mexico work, and some epidemiological highlights.

1.6.1 Health overview and transition in Mexico

There is a double burden in Mexico of undernutrition and overweight (Moreno-Altamirano, 2018) not only in adults but also in children (Ramirez-Hernandez, 2018). There has also been an epidemiological transition from infectious diseases to chronic ones (Leon-Cortes, 2019). It is also noticeable how 28% of the population lives with disabilities because of the comorbidities associated with non-communicable diseases (Gomez, 2015). In the last National Survey (ENSANUT for its Spanish abbreviation), 70% of adults above the age of 20 were classed as overweight or obese (OMENT, 2017) and as a consequence, type II diabetes and other chronic diseases have been identified as the most common causes of death in the Mexican population. Furthermore, obesity is more prevalent in rural populations (Bertran, 2010).

War against obesity was declared almost twenty years ago in the US and since then a constant fight against fat started to create controversies around food choices (Biltekoff, 2012). Obesity trends in Mexico have constantly increased, and this chronic disease has been related to the rising rates of diabetes, high blood pressure, cancer and long-term disabilities

(Velasco-Contreras, 2013). As a result, healthcare costs have reached the equivalent of 64% of the total health budget per year (Soto, 2017). A major health reform was implemented by the government less than a decade ago which was seeking universality for healthcare access. This strategy, however, faces various challenges and has changed with every change of government every six years (Leon-Cortes, 2019). Some strategies carried on to tackling obesity have been educational campaigns, fiscal responses, and publicity regulation although health authorities accept there is room for improving and increasing this plan (Soto, 2017).

In Mexico, there has been a transition of nutrition patterns to a "Western diet". This includes high consumption of fat, animal-sourced foods, sugar and refined foods (Bridle-Fitzpatrick, 2016) and ultra-processed packaged foods (Kelly & Jacoby, 2016). Some authors argue that migrants moving from rural to urban areas, consume these products (Housni et al., 2016). Others think that the rapid growth of disease burden and Mexico's food industry has contributed to this transition (Gomez-Dantes et al., 2016), and some blame the convenience and immediate reward (even addiction) that this type of food represent for the average Mexican worker (Kelly & Jacoby, 2016). Long-Solis (2007) has argued that good quality sources of complex carbohydrates, enough proteins, vitamins, and minerals constitute traditional Mexican regimens, additionally, some authors (Rivera-Dommarco et al., 2018) have proposed that the Mexican diet is sustainable.

In terms of economic changes, places for consuming food have changed throughout the years, since the majority of the workforce needs to travel long distances to work or study (Trujillo & Muniz, 2014). Therefore, food-street vendors have become more available (Long-Solis, 2007). It has been reported that eating in Mexico City is easy due to the higher availability, in *tianguis*, markets, supermarkets, food vendors. Franchises of fast food as well as small shops, which are sometimes available 24/7 have had major growth in the last couple of decades (Bertran, 2015).

In the countryside, there is more availability of low cost and low-quality foods, more specifically the industrialised. Some other statistics from different organisations have shown that industrialised snacks and sugary drinks are purchased to a higher extent, similarly to countries such as the US and Canada (Moreno-Altamirano, 2018). Others argue that there is a lack of nutrition guidance from health professionals and that obesity is a public health issue with higher trends prevailing among lower socioeconomic groups (Bridle-Fitzpatrick, 2016) and relatively stable within upper socioeconomic groups (OECD, 2014). These trends, however, according to some, have been partly caused by the exposure to "junk" food brought by globalisation (Velasco-Contreras, 2013). Non-nutritious food is rapidly replacing

traditional Mexican foods given the input in marketing that transnational companies are placing in social circles (Lutz, 2016). Commercial freedom and marketing growth of food have contributed to a less healthy diet in Mexicans (Moreno-Altamirano, 2018). Some food purists in Mexico sustain that traditional Mexican food seems to be less sought by the public, added to the nutritionist's opinion that some new foods sold in the street are dangerous and might be the cause of obesity and other diseases (Long-Solis, 2007). Nutritionists at the primary healthcare clinics are responsible for offering talks on preventive health. Although the Mexican government keeps favouring a health promotion strategy, they do not have a whole strategy that encompasses all approaches and programmes, and therefore separated efforts have narrow scope outcomes (Bertran, 2015).

Now that an overview of Mexico's health situation has been established, it is pertinent to describe the system and structures designed for addressing the population's health problems in the first level, also called primary care.

1.6.1.1 Current Healthcare context

Almost all of the Mexican population has access to social security but there is an issue when it comes to providing a high-quality service (Barraza-Llorens et al., 2012). There are three major institutions that provide primary care in Mexico - IMSS, ISSTE, and SSA for their initials in Spanish - although there have been attempts to unify all services for years, the government has not yet finalised addressing this major challenge (Lopez-Arellano & Moreno, 2015). In the meantime, among Mexican people, more than half of health expenditure comes out of people's pocket (through private practice/insurance) rather than supported by health institutions (Perticara, 2008), which is high as compared with countries such as the United Kingdom (less than 10%) (Barraza-Llorens et al., 2012). In this way, Mexican low-income families exacerbate their poverty due to the lack of universal and good quality health insurance coverage (Barraza-Llorens et al., 2012).

The current healthcare focus in Mexico warrants a "scientific" approach to health and disease, assigning higher relevance to biological sciences, and excluding cultural, social, and psychological influences. Patients' passive participation and authoritarian practitioners are central tenets of this model (Menendez, 2005). Mechanistic approaches have been used to address health behaviours (Cohn, 2016). The health system in primary care has a curative, objective (Cohn, 2016) and individualist focus (Varela-Rueda et al., 2016). The current model has failed in addressing chronic problems such as alcoholism, for which support groups have been established (Menendez, 1986). Moreover, some literature has evidenced the "schizophrenic" conduct of the State when promoting a healthy diet but equally, opening wide spaces for food industry to put their "junk" and non-nutritious products (Lutz, 2016).

The medicalisation of obesity has allowed a consequent medicalisation of dieting (Bertran, 2015), however, this has reached more popularity within the popular culture rather than being recommended by professionals (Maurer & Sobal, 1995). They actually promote behavioural changes, supported by the current medical models (Maurer & Sobal, 1995). The World Health Organisation (WHO) established some guidelines that contributed to reaffirming the idea that physiological needs for nutrients are more important to tackle obesity (Bertran, 2010). Patients are dependent on doctors' views, who are expected to be experts on the body and anatomical and physiological knowledge (Kaba & Sooriakmaran, 2007). These and other health specialists, however, work under the idea that parts of body (and also food) can be broken down and then bring together to form a "whole" body or food (Yates-Doer, 2013).

In Mexico, there are twelve physicians and nineteen nurses per 100,000 habitants (OECD, 2014) and three dieticians and health promoters per every ten physicians (OMENT, 2017), which compared with other countries (Canada has 225 physicians and UK more than 70 nurses, both per 100,000 habitants), is low. To become a healthcare practitioner, prospective students have to complete a medical/health science degree, which includes training on counselling practices within clinical settings (Anis et al., 2004). Thus far, an imbalance of medical specialists and the concentration of more than half of the medics in only four of the Mexican states seem to prevail in the Mexican context (Ramirez-Coronel, 2018).

1.6.1.2 Regulatory framework for dietary health approaches to advise on food, alimentación, and nutrition

Currently, there has been a growing movement supporting the idea that medics should understand more about nutrition and deal with these issues within their consultations (Dillon, 2018), as most of their consultations are related to chronic diseases linked to nutrition. However, health services, especially in primary care, are normally understaffed and lacking time to counsel patients (Larkan, 2015). Yet, in terms of trustworthiness, patients have declared to trust more in information provided by doctors, especially regarding human nutrition (Jackson, 2001). The importance of nutrition knowledge but also in improving confidence to counsel not only in medicine but also in allied health professions has been recommended by several research (Adamski, 2018). Within the nutrition community, however, there seems to exist a lack of clarity or widespread information (Jackson, 2001). In Australia for instance, very few GP's discuss nutrition with patients and when this happens,

it is normally with a specific focus on one disease not as a preventive action (Helman, 2007). However, there is a growing interest to know more about nutrition.

The Mexican law appoints the Health Ministry to determine and elaborate official norms and guidelines regarding health, call inter-institutional groups and gather health statistics. There are official norms for the treatment of chronic diseases such as obesity, diabetes, and undernutrition. It is the primary care sector in which health promotion; prevention and ambulatory care to patients are done, led by GPs, nurses, dentists and social workers (Barraza-Llorens, 2013). The official norm for the practice of nursing (NOM-019, 2013) establishes that actions amongst healthcare teams (GPs and dieticians included) can be set for patient care. Broadly speaking, the official norm for DA establishes that this advice is compulsory for any health provider to use it in primary care, without specifying which professions. This norm contains general guidelines to advise on food purchasing, preparation, and has cut off points for micronutrient distribution and allowances according to age and sex (NOM-043, 2012). For the case of obesity, the Mexican official regulations appoint the specialist doctor (bariatric) as a leader to address this health issue, supported by physiotherapists, dieticians, and psychologists (NOM 008, 2017).

The official Mexican guidelines describe healthy eating as a diet that prevents non-communicable diseases and contains at least five portions of fruits and vegetables, less than 10% from free sugars, less than 30% from fats and less than 5 g of salt (WHO, 2017). For the Mexican context, “El Plato del Bien Comer” (The plate for good eating) is the national guideline (NOM-043, 2012), which has been catalogued as sustainable, balanced and adjusted to food availability in the Mexican context (Rivera-Dommarco et al., 2018). Although physicians and dieticians are part of the multidisciplinary team authorised to treating and preventing obesity (NOM-008, 2017), staff with nutrition knowledge have various levels of responsibility and functions (Lee et al., 2006), which might not include DA.

This section is a foundational rationale for the proposed study. Food and health is a controversial topic especially when it involves making choices framed by various macro and micro influences. With chronic and nutrition-related diseases arising, there are social, psychological, cultural, and economic debates around how to address dietary health. Considering the concerning health overview in Mexico, there is an urgent need for developing innovative strategies that can be set around appointed professionals that deal with patients’ dietary health. After presenting some background and theoretical insights, the next section develops the empirical literature regarding the current state of knowledge for the proposed topic.

Chapter 2 Literature Review

2.1 Introduction

In the last chapter, the current context for this study was presented, as well as some important concepts that helped to set the ground to find more about the topic. This chapter presents the current empirical evidence surrounding the research topic. Searching for relevant literature can result in identifying the gaps in the topic area and helps to shape the research so that a question can emerge from the inconsistent (or perhaps insufficient) information, regarding a topic. The current evidence needs to be understood through the umbrella (paradigm) that falls. Therefore, a critical appraisal of this evidence is essential to build up a focused research question and a specific understanding of the weaknesses and strengths of such evidence to then sit in the rationale for the present research. In the first part of the chapter, the methodology for the search strategy is presented, as well as inclusion criteria and how the evidence was appraised. Later, the included studies are explained according to the themes that emerged, which are relevant for the present study. In the final part of this chapter, the gaps in the empirical evidence are identified and the rationale and research questions developed.

2.2 Methodology for review

A literature review is important to understand the quality and contents of the empirical evidence that is relevant for the explored topic (Aveyard, 2010). A comprehensive literature review was conducted, and the review question was: “What is the current empirical literature on healthcare students’ foodways/food choices related to their practices when offering dietary advice?” In order to have a manageable review, a systematic search strategy, a tool for inclusion criteria and the review question were designed in consultation with the supervisory team and a librarian expert in health sciences, exploring electronic databases, and later (after fieldwork) this was updated. First, the related terms to the research’s keywords were explored and clustered (see table 2-1):

Table 2-1 Clustered terms

Key term cluster / group	Related (included) terms	Search statement based on all potential related words
1. Healthcare students	Youth, college, undergraduate…	(exp students) and (exp medical/ or nursing/ or premedical/ or public health/ or nutrit/ or diet/ health promotion/) or exp students, pharmacy/ or exp students, premedical/ or exp students, public health/ or exp students, dietetics/ or exp Nutritionists/
2. Foodways	Food choices Eating habits…	((shop* or eat* or consum* or food* or feed* or diet*) adj3 (behav* or habit* or strateg* or decid* or decis* or pattern* or choice* or preference*)).mp.
3. Dietary advice	Health education Diet prescription…	exp Health Education/ exp Health Promotion/ (diet* or nutrit* or food*) adj3 (prescrib* or prescrip* or recommend* or advic* or advis*) exp Counseling
4. Beliefs/attitudes/ perceptions/behaviour…	4.1 Towards foodways	**4.1** (Attitude* or opinion* or conception* or misconception* or preconception* or conceiv* or perceiv* or misconceiv* or preconceiv* or taboo* or stereotyp* or view* or prejudic* or judg* or stigma* or cynic* or belie* or disbelie*).mp. (experienc* or understand* or perspect* or percept* or feel* or opinion* or idea* or thought* or think* or valu* or evalu* or approach* or personal* or interpersonal* or respon* or emotion* or aware* or unaware* or know* or assum* or certain* or uncertain* or expect* or engag* or relat*).mp.
	4.2 Towards own health practices	**4.2** exp Attitude to Health/ or exp Health Behaviour/ or exp Decision Making/ or exp Sense of coherence/ or exp Attitude to Health Personnel or exp Health Knowledge, Attitudes, Practice

Each search statement and potential combinations were further developed to run searches through "advanced search" for every case (Appendix 3) with slight differences between two databases, due to the different uses of the MeSH[1] terms, Booleans, symbols and rules overall. The selected databases were Ovid Medline, CINAHL and ASSIA.

There were two periods for literature searching. The initial data set was cut in May 2017 and the final cut-off point was the 30th of September of 2019. The inclusion criteria for scanning titles and abstracts are described in table 2-2. The same criteria with the review question were used to build a screening tool that guided the literature selection process. On further exploration, it became apparent the primary search showed extensive literature which met the first to fourth criteria, therefore I decided to only keep the paper if the first five criteria were met.

[1] MeSH: Medical Subject Headings: http://learntech.physiol.ox.ac.uk/cochrane_tutorial/cochlibd0e914.php

The final search conducted after data collection was modified after revising with the supervisory team and including new related terms. Since a study that draws upon CR cannot just settle with conventional and positivistic methods for searching the literature (Edgley et al., 2016), other strategies to find information relevant o context, background and that could provide qualitative studies in the area were applied. Other rigorous Latin American databases (Lilacs, Scielo, and Redalyc) were included to provide relevant papers from the Mexican/Latin-American population. This enhanced the robustness of the literature review. Results were found as follows: In LILACS the same words used in the first strategy were filtered by year (2017-2019) and in English/Spanish, only giving 27 hits of which, none were relevant. In REDALYC the words "food choices OR foodways OR eating" AND "advice, students, health" were searched anywhere in the paper. To avoid overlapping or repetition with other databases only 2016-2018 papers were sought, and this resulted in 25 hits (with nothing relevant). In Scielo: "alimentarias", "estudiantes" "salud" (with no time range) offered 44 hits and none of them were relevant. Hand-searching was conducted in three key journals, which were found when looking at potential keywords, to construct the search strategy. Although there were a few hits by title, when looking at the abstracts a few of them were discarded as they described students from high school, secondary, or elementary education or because they were general university students, not from healthcare degrees. In the Journal of Food culture: key terms used were "food choices OR foodways OR eating OR food" AND "advice OR counsel OR recommendation" AND "students" AND "health" anywhere in the paper (August 2017-August 2019) and the number of hits was 26 of which none was relevant. With the same strategy and dates, the Food and Foodways Journal was revised and gave only 6 hits, with nothing relevant that included the two components of the search question. For the Appetite Journal, the used strategy was "students" AND "health" AND (diet OR food OR eating) AND (advice OR counsel) anywhere in the paper (2017-2019), filtered by research papers only, obtaining 142 hits of which none was relevant. All databases final hits are shown in table 2-3

Table 2-2 Inclusion Criteria

Criteria when scanning/reading titles/abstracts	Yes	No	Can't say
1. Language Spanish or English			
2. Quantitative, qualitative or mixed methods research (not protocol or pilot studies nor opinion or commentary, nor conference article). Priority to primary research			
3. Study participants are healthcare students from any part of the world			
4. Study participants are studying to become health professionals who know and will offer dietary advice to patients (students of nutrition/dietetics, nursing, medicine)			
5. Study includes reported food choices/foodways/dietary patterns/eating habits **AS comparison** or **determinant factor** of (**RELATED TO**) health/dietary advice/prescription **OR** health education **OR** being role models			
6. Paper within the Mexican context that is related with foodways or dietary advice (as no paper included both aspects) of healthcare students and/or health professionals. These hits served not only as background literature but as literature review of Mexican evidence.			
The first 5 criteria must be met for retention and revision of full text. If all 6 items are met, this will be saved as key paper *If Yes only to four, the paper will be discarded* *For context and background literature, as well as Mexican evidence, papers that met 1st and 6th items will be kept*			

Table 2-3 Databases final hits

Database / Journal	Final hits and combination of MeSH terms
OVID Medline	(2,355) Final search strategy explained in Appendix 2
CINHAL	(1,012) "foodways" AND "health students" AND "attitudes" AND "prescribing"
ASSSIA	(574) Created similar search than OVID
LILACS, REDALYC, Scielo	(96) "Food" AND "student" AND "health". Screened by title and abstract result in 1 hit
Food and Foodways	Key journal: 6 hits
Food, Culture and Society	Key journal: 26 hits
Appetite	Key journal: 142 hits

To increase the robustness of the literature, as well as to currency, after conducting the first search and before data collection started, alerts were set for the same search strategy in the databases of Ovid, EBSCOhost/CINAHL and for Zetoc[2]. Additionally, another alert in google scholar was set to extracting relevant papers every month since the study was approved. Keywords for these were "eating practices, undergraduate health students" or any of these words in the title or abstract. Inclusion criteria were applied as an ongoing process for every email (title, and when relevant, in the abstract). In the course of a two-year period (01/07/17 to 30/09/19), there were revised a total of 537 emails, each one containing

[2] Which was advised by the librarian and offers global publications (http://zetoc.jisc.ac.uk/)

approximately between 1-50 titles (of empirical or sometimes grey research), which were filtered in the same way as the first systematic search. This exercise resulted in the extraction of 3 key papers. The final strategy to ensure a comprehensive method into gathering all potential empirical data, was backward and forward snowballing (Jalali & Claes, 2012), which consists of looking at bibliographies as well as who cited the papers. The exercise of looking at the references helped to ensure that the original search strategy was comprehensive enough, as at least half of the key papers were also used amongst authors and were found on those lists. Regarding looking for citations, a total of 1109 titles were filtered with the inclusion criteria and almost 50 abstracts resulted; selecting seven as key articles. Other relevant papers, that did not meet the full inclusion criteria for the emergent findings were gathered through these alerts and were used to addressing aspects of the theoretical and background literature.

Although from these additional searches various papers were highly relevant for the topic, many were discarded as they did not meet the criteria of being authored by students (from health professions). The papers found and the filters applied for screening are described with a PRISMA Flow chart (see figure 2-1).

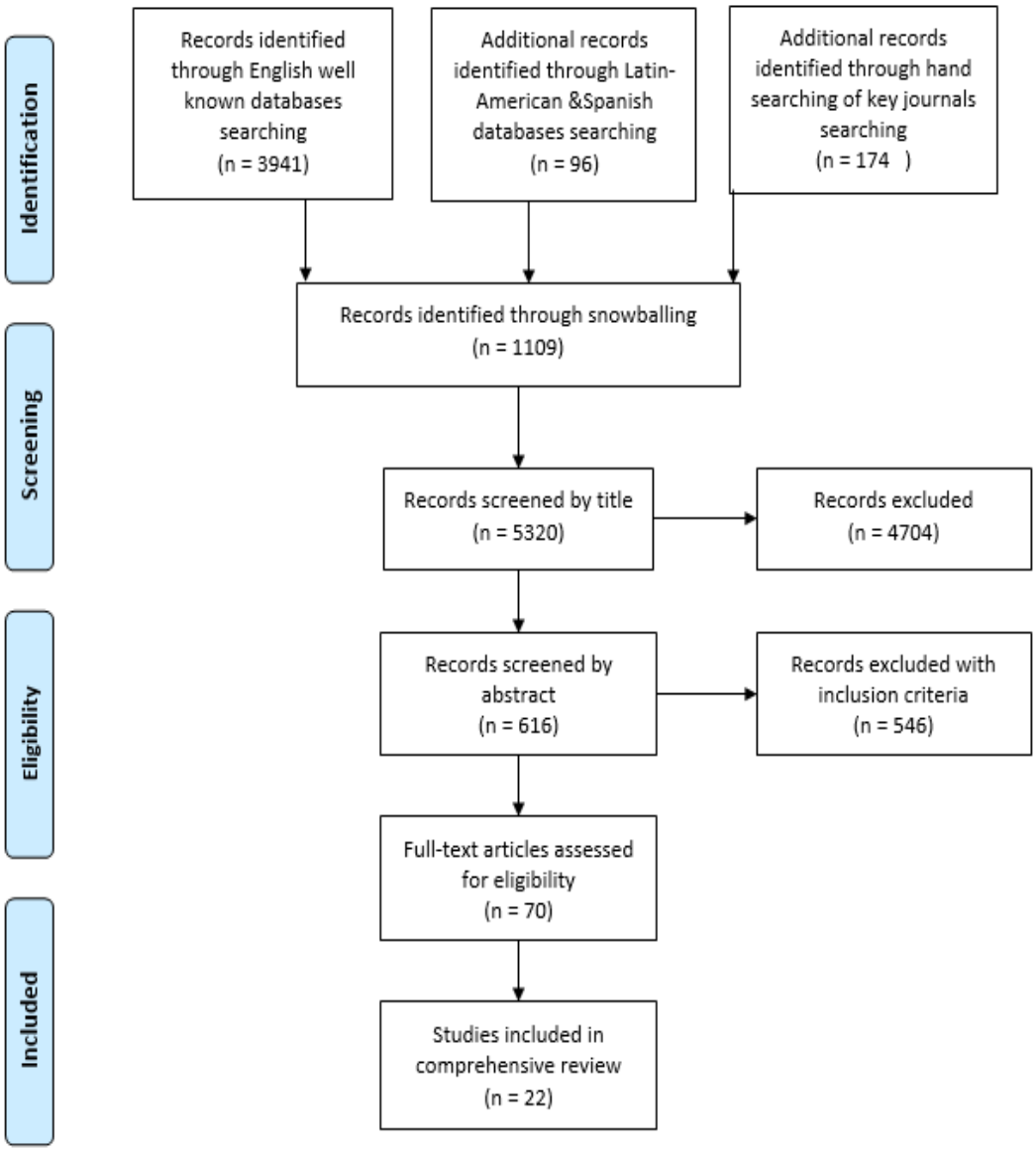


Figure 2-1 PRISMA Chart

In summary, 5320 papers were scanned by title and 70 were selected for full reading, but the ones that did not contain both food consumption (collected as food choices, eating habits or similar) and dietary advice (even when this was included as part of health promotion or preventive practices), or that only included professionals (rather than students), or were not primary research or were not in the included languages, were excluded. The final number of included studies was 22, including both qualitative and quantitative approaches, only three of which focused on Latin-American countries (not Mexico). These 22 papers were included in the matrix and appraised according to Aveyard (2010) and Crombie (1997). The following tables indicate the type of appraisal recommended.

Table 2-4 Appraisal according to type of study

Questions that guide the appraisal of literature (Aveyard, 2010) according to the type of study	
Quantitative studies	**Qualitative studies**
What is the research question and why was the study conducted?	Who wrote the paper?
What method was selected to undertake the research?	Where is the paper published?
How big was the sample?	Is there a research question and is the method appropriate for addressing the question?
Has the appropriate sample been obtained?	Was the right qualitative research method used?
How were the data collected?	What was the sample for the study?
How were the data analysed?	How big was the sample?
	How were the data collected?
	How were the data analysed?

A matrix (Appendix 4) was created for extracting the main components of the analysed papers and to review the strengths and weaknesses of the final papers. Lastly, papers were clustered in categories according to their aims, methods, and hypotheses. The themes are specified in the table 2-5

Table 2-5 Clusters for Endnote

Cluster	Rationale	Number of included papers
A	Food choices/eating habits relationship with attitudes towards dietary advice/nutrition counselling	11
B	Food choices/eating habits relationship with statements for congruence or attitudes towards being role model	4
C	Exposure to intervention (programme, course, lecture) and comparison before and after eating habits and attitudes towards preventive counselling on diet	7

In the following section, the analysis of the selected papers will be presented, but first, it is important to note some remarks on similar studies that were conducted in professional populations (or qualified healthcare staff) and were discarded as they did not include students.

2.3 Evidence on health professionals (already qualified staff)

Most studies are about physicians, followed by nurses. For the case of the physicians, a survey conducted by Frank et al., (2010) found that being female and having healthy personal habits was related to usually counselling patients about health behaviours. They also reported that GPs who ate more fruits and vegetables, as well as those with lower weight, counselled patients more often about nutrition. Hiddink (1996) conducted a study that

analysed physicians' guidance on nutrition and found that they wanted to deliver this nutrition knowledge to patients. A different study found that nurses with a healthy lifestyle were reported to have more chances to provide advice on a healthy diet (Hasson, 2018), and another study added that healthy nurses had a stronger positive association with feeling like role models (Hurley, 2018). A study that involved nurses, health promoters, physicians and dieticians (Shahar et al., 2009) tested an intensive self-experience workshop emphasising lifestyle modifying techniques and found a modest effect on their health promotion activities, but a major influence in the decrease in physicians' waist circumferences, which according to Shahar et al. (2009) suggests a use of the course's information for their own health benefit. A systematic review of evidence of professional nurses' own diets vs their health promotion practices found mixed opinions amongst the three studies' (two of them qualitative) participants. On one side, incongruence with healthy eating habits were seen as hypocritical (if they were overweight), but on the other side, some nurses with obesity took this as an opportunity to connect with patients that could see them as real people not as the perfect "thin" (equivalent to healthy, according to authors) role model. Nonetheless, some authors reported that training and knowledge influenced patients' health behaviours more than the own professional practices. In Mexico, there is no evidence on professionals' foodways and the type of advice they provide to patients.

2.4 Characteristics of the studies

All key papers were in English and the ones in Spanish (not classified as key) helped to gather the Mexican literature on similar topics. The timeframe in which these studies were conducted was 26 years (between 1993 and 2019). Nineteen studies included medical students, two included nurses, and one included physiotherapy students. Reasons for focusing on medical were the background of researchers and the ease of accessing medical schools (Ammerman et al., 1993; Frank, et al., 2007). Sample sizes varied broadly between 15 and >2400 participants. Settings were mostly from the United States (11), followed by Latin American countries, 2 from Colombia and one from Brazil, as well as the Pacific (Australia two, New Zealand one, and Asia one). Only three belonged to the United Kingdom/Europe and one to the Middle East. Only two studies obtained their data through a qualitative method, which used semi-structured interviews (Cardoso et al., 2019) and FGI (Frank et al., 2005), while twenty studies applied quantitative approaches. The extraction of the main components of the papers is shown in Appendix 4. The next part provides the key description and critical appraisal of this empirical evidence. This section 2.5 provides an overview of how authors addressed eating habits or food choices and how they evaluated this in their participant population.

2.5 Food choices

Several of the included studies evaluated HS' food choices using a questionnaire that measured the compliance of Dietary National Guidelines (DNG), which are aligned to the World Health Organisation guidelines (WHO, 2017). The evidence suggested a low consumption of vegetables in medical (Foster et al., 2002; Khandelwall, 2018; Memel, 2018; Perlstein, 2017; Spencer, 2006;) and nursing (Blake et al., 2016; Blake and Harrison, 2013) students as well as a low disposition to follow DNG (Black et al., 2012; Duperly, 2009). Ketelaar et al. (2014) used an alternative approach to DNG, considering times to eat and meals regularity, but they also documented that more than half of medical students had unhealthy eating habits. Conroy (2004) used a 24-hour recall and food frequency. Rose (2011) used a validated short questionnaire about the presence of vegetarianism and fruit consumption, as well as attitudes to food; Malatskey (2017) used questions on personal health behaviours including diet. Hu (1997) documented that 25% of medical students did not have breakfast, delayed meals (without specifying what they meant by this) and were worried about their diets. These findings are limited since no information about the diets' qualities and constraints are shown.

However, one of the two qualitative studies (Cardoso, 2019; Frank, 2005) conducted in a Latin American setting obtained broader explanations on medical students' food preferences. This study showed that medics were knowledgeable of how often they should eat low fat/sugar products, but they had difficulties applying this in their own lives (Cardoso, 2019). In a comparative study, medical residents scored worse than their educators with regards to their daily intake of fruit and vegetable, which might indicate that, when being professionals, conditions may help to trigger a healthy diet (Khandellwall, 2018). Assessing a healthy diet through self-reported questions of DNG compliance seems unclear.

A number of studies emphasised various limitations in being able to follow a healthy diet. These were the high price of perishable foods such as vegetables (Frank et al., 2007), constant changes in working shifts (Blake and Harrison, 2013), dislike of vegetables (Alba et al., 2015), a demanding curriculum (Perlstein, 2017) and lack of support from their teachers/trainers (Cardoso, 2019; Malatskey, 2017). One study, however (Khandellwall, 2018) found that medical students reported having healthy options, but their fruit intake was still low. A study in a different setting (Rose, 2011) reported that even when fruit and vegetable consumption was below the DNG, there was a high expectation of increasing this in the future. No study explored foodways as a framework, but only the actions and attitudes towards what medical students considered a healthy diet. This quantitative evidence,

however, demonstrated that HS have poor and unhealthy food choices, at least according to the corresponding official guidelines and the own authors' ways of assessing diet.

The second component of the review questions was the advice on diet that future health professionals deliver to patients, and authors in this review drew upon various factors to evaluate the different evidence that can show several assessments of if and when this advice was delivered. This is explained next.

2.6 Factors related to dietary advice

There are various ways in which authors refer to DA. Most of them described preventive health advice that, in addition to counsel on diet, contained other factors such as physical activity, smoking, alcoholism. In the next subsection, various aspects contemplated in the empirical literature assessing how students deliver this advice are presented.

2.6.1 Self-efficacy through confidence

Seven studies (Blake and Harrison, 2013; Conroy et al., 2004; Crowley et al., 2014; Foster et al., 2002; Schlair et al., 2012; Spencer et al., 2006; Yu et al., 2015) measured self-efficacy, through confidence of students to have healthy food choices and/or to offer preventive advice or nutrition counselling. Four of them applied a questionnaire before and after a nutrition course or lecture, which suggests that their own behaviours are related to the knowledge/training of these students. Nonetheless, the course and setting were different which might explain the contrasting results. Medical students felt more confident advising on diet to their families and patients' after the course (Conroy et al., 2004). The same was reported by Schlair et al. (2012), although the association was stronger when students had a healthy diet, the outcome that was associated with the course. Crowley et al. (2014) reported that after the course, students decreased their confidence in providing healthy recommendations to family or friends. However, their awareness of their own dietary choices improved. Spencer et al. (2006) found that confidence did not change significantly over time.

Rose (2011) did not include any interaction and evaluated only the overall medical training, created a statistical model where they compared food habits with confidence to counsel on weight control. Interestingly, the frequency of counselling was positively associated with moderate to light alcohol consumption. They found that confidence increased over time,

regarding attitudes to counselling on weight. It is unknown which part of the training was more effective to obtain these results. Collectively these findings reinforce the idea that students' training is influencing to some extent their counselling practices on diet.

The only qualitative study that did not include any intervention (Cardoso, 2019) found that medical students did not feel confident about providing advice and would refer patients to a dietician. A few participants believed that treatments that did not include medication required a greater effort to change in patients and that they did not know any effective strategies when it comes to lifestyle (Cardoso, 2019). For the quantitative studies, one study stressed that since there are significantly fewer dieticians than physicians, patients' diets needed to be discussed with the latter (Khandelwal, 2018). Foster et al. (2002) and Schlair (2012) found high rates of confidence in advising on weight control and healthy eating, and Yu et al. (2015) and Duperly (2009) found a strong correlation between students' confidence to counsel with their own weight control or/and with having healthy dietary habits. Only one study (Blake and Harrison, 2013) related to role modelling reported confidence to counsel and found that nursing students had low confidence in promoting healthy behaviours if their own were poor. Rose (2011) found a positive association between medical students' higher fruit intake and confidence that this will improve, with medical students' confidence to counsel on weight loss.

Two studies (Memel, 2018; Yu, 2015) compared confidence to counsel with having a healthy diet, finding an overall positive correlation. However, skills to provide advice, measured through closed questions, do not contain explanations or deeper understandings; having this evidence would help to understand how interaction with patients shape these skills and experiences. Confidence is an important self-belief that helps to function in a competent way (Bandura, 2001). It is grounded in the psychological domain, and the reviewed studies that used this failed in providing reasons for changes in confidence or specify courses' characteristics or components that developed self-efficacy of students. For instance, Conroy (2004) mentioned that even when the medical education curriculum intends to encourage confidence in offering advice, the authors did not specify the component that could have increased this.

An important part of a patient-practitioner interaction is the credibility that the latter has to encourage behavioural change, and various studies used different strategies to explore this factor as a determinant of counselling on dietary health. This is presented in the next subsection.

2.6.2 Credibility and congruency

One of the three main clusters was related to the relationship between food choices and congruence statements or attitudes towards being a role model. This seems to play a fundamental role when it comes to counselling practices. Nurses did not seem to believe that having healthy eating habits as well as promoting them, was part of their role (Blake, 2016). The lower the students' perceived credibility, the lower the positive impact on patients' health (Blake and Harrison, 2013; Yu et al., 2015). For those students that evaluated the impact of their own food choices on their own credibility when counselling on diet, Memel (2018) found that a low number of medical students agreed with the statement "Most patients will try changing their lifestyle if I advise them to do so" which means that they perceived their credibility to be low. Spencer (2006) found higher perceived credibility on students with healthy food habits. Khandelwal (2018) did not evaluate credibility, yet they found more frequent DA when medical students in their residency stage had healthier food habits.

Health programmes as part of students' training were proposed to achieve congruency with the HS profession and better knowledge. Nonetheless authors who quantitatively studied the impact of these programmes found no statistically significant effects (Alba et al., 2015, Frank et al., 2007). Frank et al. (2005) used a qualitative approach to assess how useful a programme was and found important highlights such as higher awareness on healthy eating habits, and interest in improving counselling practices and strengthening their knowledge about nutrition.

When HS did not have the knowledge about food, diet, nutrition and how to promote healthy eating habits, they did not bring this up with patients. The next section describes in which ways authors evaluated knowledge, and in some cases, they measured an intervention. Other authors used different assessments to understand what type of healthcare training the targeted populations had, with regards to counselling practices.

2.6.3 Nutrition knowledge

Seven studies (cluster C, Appendix 4) applied an intervention to their population that had to do with nutrition knowledge and, to a less extent, with abilities and attitudes to providing counselling on diet, food or lifestyle. All these mentioned studies included only medical students. Only in a few cases, this knowledge was integrated as part of medical students' curriculum with a practical approach (applied as health programmes for students) but it was

through lectures or courses that nutrition topics were taught (Alba, 2015; Frank et al., 2005) to them in a limited time. All these studies, except for the ones that implemented a programme evaluated students' nutritional knowledge before and after the course. They reported better outcomes in counselling practices (Schlair, 2012), yet this had little or no influence in the improvement of their own HS health behaviours (Conroy, 2004; Crowley, 2014; Malatskey, 2017; Perlstein, 2017).

Regarding relevancy to counsel on diet, having nutrition knowledge increased students' confidence to increase their own fruit consumption in the future. Medical students considered this advice less relevant the further along in their studies they were, particularly for the case of weight loss, explaining that this was partly given their few knowledge and partly due to their time constraints (Spencer, 2006). The perceived relevance of advising was higher the healthier medical students were (Frank, 2007). One of the oldest papers reported poor nutrition knowledge in medical students, but these participants considered it important to have basic notions as they agreed that a therapeutic diet helps for patients' recovery and symptoms of diseases related to diet and nutrition (Hu et al., 1997). In a more recent study, it was suggested that nurses and medics were equipped with knowledge about a healthy lifestyle as well as ways of delivering a successful weight management (Blake, 2016), although for a few authors there was the question of whether medical professionals should be involved in nutrition-related topics with patients (Keteelar, 2014). Only a couple of these studies suggested that improvements in healthcare curricula should emerge from students' views and opinions.

When comparing adherence to DNG with nutritional knowledge, Conroy et al. (2004) showed that an innovative nutrition course decreased students' saturated fat consumption. Ammerman et al. (1993) found no significant correlation between knowledge with attitudes towards food/health behaviours. Crowley et al. (2014) reported an increased wholegrain food intake when students undertook a compulsory course. Schlair et al. (2012) found higher motivation for students to improve their fruit and vegetable consumption after basic nutrition training, and higher vegetable and fruit consumption was reported after the course. Contrastingly, despite their knowledge regarding prevention, HS had consistent unhealthy food choices (Foster et al., 2002; Malatskey, 2017). Differences might be due to the tools they used to asses knowledge and diet; therefore, the evidence is unclear. It seems important to understand in a broader way how the different stages of healthcare education shape students' knowledge and beliefs about their counselling practices. Since two of the seven studies were conducted more than ten years ago, some changes might have happened in their current curricula.

With respect to training stages, Alba et al. (2015) found less unhealthy eating practices while progressing training, although they could not determine if this was a result of the health programme they implemented for students. Nonetheless, they stressed the importance of exploring the social determinants of food choices to compare it later with counselling practices, which includes a social component. Students seem keener to learn and apply their nutritional knowledge at the early stages of their education when they take a non-compulsory nutrition course (Alba et al., 2015) the more positive attitudes to healthcare the more knowledge HS were keen on learning.

Contents of the mentioned courses/lectures/interventions were broad or unspecific. For instance, Crowley (2014) implemented a course on the digestive system and the impact that food had on the body but did not contain advice on how to counsel patients and promote healthier food choices. Conroy (2004), Malatskey (2017), Schlair (2004), and Perlstein (2017) used less than four weeks (sometimes less than two hours) to offer lectures on healthy eating or in some cases cooking demonstrations (Malatskey, 2017). Students in one study that focused on the provision of knowledge in CVD found that students were learning more about what foods to restrict on patients, rather than allowances. Conroy (2004) admitted that they did not recognise which component of the course was more effective for the improvement of behaviours. At least a couple of these authors acknowledged that it was unfeasible to teach an in-depth programme on nutrition when they only have limited time to do so. Almost none of the included studies specified if these actions were targeted to HS own lifestyle practices or for them to use it when advising on diet. Only three authors focused strongly on courses that helped students more in counselling practices (Conroy et al, 2004; Perlstein, 2017; Schlair et al., 2012), as well as with their knowledge in nutrition.

The mentioned studies pointed out the need for improving medical education and healthcare practices. Nutrition was highlighted by the authors as an important discipline that medical professions should know about (Ammerman, 1993; Frank, 2007). Crowley et al. (2014), Blake and Harrison (2013) and Black et al. (2012) recognised that nutrition courses should be evaluated in real scenarios where students are expected to apply this knowledge. Duperly, (2009), Foster et al. (2002) and Yu, (2015) emphasised the importance of strengthening counselling abilities when students become professionals, however during their training there should be an emphasis on the significance of being credible by improving their own health behaviours. Under this view Malatskey (2017) considered it important to offer individual support, and Memel (2018) found that medical students' knowledge was insufficient. Universities in this sense must act as a basis and support for future health professionals

(Cardoso, 2019). Frank et al. (2005) and Memel (2018) obtained arguments through qualitative methods from students that show how necessary applying nutrition knowledge in real encounters with patients is, and how hands-on experience is the best way to prepare medical students for this. Applying knowledge on nutrition, diet or food is possible through HS interactions with their patients and for that, at least seven authors acknowledged the various features that influenced this advice and some essential components of counselling practices, which are explained in the following subsection.

2.6.4 Characteristics of counselling

Even though students were keen on learning about nutrition (Memel, 2018), some guidelines that HS needed to advise seemed confusing (Alba et al., 2015), unfeasible (Ammerman et al., 1993), and unrealistic (Frank et al., 2007) for their patients. However, Foster (2002) stated that practice and training should be HS motivation for achieving a positive impact on patients. They also reported that HS beliefs in their capability to counsel for cardiovascular diseases (CVD) specifically declined over time. Nurses in a different study (Blake, 2016) did not feel competent enough to provide advice on healthy eating.

Being a woman, Hispanic, of black ethnicity, or young (Yu, 2015) was positively correlated with offering preventive counselling on diet (Frank et al., 2007, Spencer et al., 2006). Brief messages from GPs can have an important impact on patients' health behaviour (Ammerman, 1993). After interventional nutrition training, counselling practices improved and happened more regularly (Schlair, 2012), or at least HS were more receptive to nutrition knowledge (Malatasky, 2017). In another case, they reported the frequency of counselling positively affected medical students' fruit and vegetable consumption (Rose, 2011). Even when some studies specified the contents of their course, only Crowley (2014) acknowledged that the course did not include components about how and when to counsel on diet, and courses were more theoretical in nutrition notions. In an opposite case, Malatskey (2017) did include in their one day course how to deliver lifestyle medicine advice (which was relatively new according to them) although it seems unlikely that a one-day course would have a major impact (or would include in-depth nutrition knowledge, as they called it) on HS overall eating practices.

A few included studies found a positive correlation between healthy diet and attitudes towards preventive counselling in medical students, but these did not explain the characteristics of this improvement (Ammerman, 1993; Memel, 2018; Spencer, 2006). Contrastingly, Ketelaar et al. (2014) found no significant effect between unhealthy

behaviours and counselling practices, although they applied different assessments, in this case, by only asking about meals. In a study with physiotherapy students, Black (2012) found that the healthier the weight of students, the more they believed in practising what they promoted. Interestingly, being physically active was more positively correlated with counselling on diet (Alba, 2015). Only one study evaluated characteristics of counselling through assessing HS knowledge on dietary guidelines for specific diseases (Perlstein, 2017). Despite these correlations, reported barriers for performing and improving dietary counselling were lack of perceived relevance, perception on patient interest, little time for consultations (Khandelwall, 2017) and lack of resources in primary care (Ammerman et al., 1993). Three studies explained the reasons for the low frequency of counselling, for instance, Khandellwall (2017) reported a lack of support from the faculty authorities and educators. However, this type of counselling was analysed for CVD risk factors. It seems necessary to clarify more about how DA may have a major influence on patients' dietary health.

There were various studies that proposed behavioural theories as tools to improve HS patients eating habits through counselling practices. Only a few drew upon psychological models to assess role modelling, health behaviours and their change through time, and eating habits from the behavioural point of view. These perspectives are presented next.

2.7 Psychosocial perspectives

Food choices are associated with the need for nutrients for the body to function, but also with elicited memories as well as experiences and sensations such as pleasure (Schaefer, 2016). Additionally, psychosocial theories were used by four studies included in this review to elaborate on surveys. To measure change of own dietary behaviours, Blake and Harrison (2013), and Black et al. (2012) used the trans-theoretical model of behavioural change (Prochaska and Velicer, 1997). Schlair et al. (2012) used this model to explore fruit and vegetable consumption, healthy weight, and other nutritional habits. Frank et al. (2005) used Bandura's (1977)'s model of social learning to design a health programme as a strategy to achieve a higher awareness of healthy habits and more effective preventive counselling. Black et al. (2012) used the same theory to review role modelling. To assess the capacity of exercising control over their own health (Bandura, 2001), Black et al. (2012) also measured self-efficacy on counselling practices using a scale. Given that various authors supported their assessments or the variables they were trying to measure (such as role modelling) on some of these models, it is relevant to highlight some psychological theories that have been related to eating behaviours.

Bandura's Social Cognitive Theory, about moral conduct and behavioural change, includes self-reflective influences and self-regulation (Bandura, 1991). Self-efficacy is one example of the self-perception beliefs to perform in a competent way (Bandura, 2002). Bandura's social learning theory states an observational learning or identification from our role models, such as what HS would represent for their patients. Moving on, the trans-theoretical model of behavioural change emerged from several (mostly psychotherapy) theories and sustains that changes in health behaviour happen over time through six stages: pre-contemplation, contemplation, preparation, action, maintenance, and termination (Prochaska and Velicer, 1997). Lastly, the health belief model grounds on the principle that people's beliefs, expectations, and feelings; influence their positive changes in their own health behaviours (Glanz et al., 2008; Rosentopck, 1974).

Much literature separates historic and social influences from eating behaviours. Nonetheless, Sobal's (2009) model of food choice has acknowledged how food behaviours are indeed intimately attached to cultural and personal experiences. They acknowledged that psychosocial theories are important, health-related behaviours have individual, social, and structural influences (Glanz et al., 2008), that are not always studied by the psychology domain (Das and Evans, 2014). A question that remains unanswered is to what extent health professionals have recognised the powerful influence that they have on society (Cardinal, 2001).

In summary, only three studies were conducted in Latin-American countries, which have similarities with Mexico. Almost all studies included only medical students and only two were qualitative. The empirical evidence shows that HS do not have exemplary eating behaviours and habits. Cluster B, which contained studies applied to an intervention related to nutritional knowledge, showed an overall positive impact on HS confidence to provide advice but impact on their own eating behaviours seemed unclear given the different assessments applied or research designs. There seemed to be an insufficient and not comprehensive training on DA or nutrition (and HS seem keen in receiving this training), and knowledge did not seem to be an important influence to improve own health behaviours (although reasons were not sufficiently explained). These papers also showed various reasons that HS considered important barriers to providing health advice; however, according to the authors who drew upon psychological theories, issues with patients, a healthy lifestyle promotion, and healthy behaviours could be due to individual factors.

This review contained a few Latin American studies, but there was no Mexican evidence about the review question. However, when reviewing (according to the strategies described

in section 2.2 and 2.8) the relevant literature, various studies that describe separately HS food choices, eating habits/behaviours and/or other factors that highlight links with their education/training/knowledge on food were found and are explained next.

2.8 Mexican literature

At the time of conducting the systematic search and applying the inclusion/exclusion criteria (table 2-2), when scanning by title and abstract, if a paper did not include the main components of the research question but was conducted in a Mexican student population group, this was considered as material for either one or both the background literature and the evidence in Mexican HS. Nonetheless, papers were only useful for background literature and not for the research topic, which led me to look for studies in Latin-American databases and to use hand-searching. The exact phrase of "mexic" was typed in the MUST contain (anywhere in the text) search engines along with combinations of key terms as it was specified in the section 2.2. Another valuable source for the Mexican literature were some researchers who I talked to before travelling for data collection; a researcher at the institution where I studied my first degree in Nutrition shared evidence of a study conducted with healthcare staff and that only reported an intervention to improve their lifestyle (Bustos and Rivas, 2006). Since there were only a few studies on healthcare students, evidence on Mexican HP was also considered to describe the current empirical evidence related to the topic.

The selected studies had interesting findings despite they did not look at the research relationship. In this case again however, medical students have been the main target of several research approaches. For instance, during their residency, they face problems of dehydration and problems in their performance (Maryam et al., 2016) or they do not have a healthy lifestyle (Rodriguez-Gazquez, 2018). Reports on Mexican medics that work in government institutions have shown poor eating habits as well as alcohol abuse (Velasco-Contreras, 2013). Another study with healthcare staff showed the positive impact of a health promotion programme in their overall health (Bustos and Rivas, 2006).

Regarding other HS, a study identified that less than 30% of nursing students eat at least three times/day, but their fruit and vegetable consumption is lower than what the DNG recommend, and they do not consume breakfast regularly (Garcia-Reza et al., 2016). High prices of healthy food make a nourishing diet unaffordable for Mexican nursing students (Garcia et al., 2016). A study that included nursing and nutrition students (Hall et al., 2017) registered in universities from various Mexican regions found that SES was strongly

associated with dietary intake. It also showed an association between stress and fat consumption, though the authors suggested further studies to understand these reasons when these types of students have nutrition knowledge. They argue that Mexican undergraduates' dietary habits lean towards a more industrialised food. There were no differences within Universities and they only used 24h-recalls to collect their data. One study with Mexican nutrition students that found a similar trend but also conducted a qualitative component in their study, discovered that students could not only benefit from DA, but also from healthier options than they currently had in their cafeteria (Hernandez et al., 2010).
A study with nutrition students showed that symptoms of eating disorders and corporal dissatisfaction were higher amongst men than women (Cruz-Bojorquez, 2008). A similar study with nutrition students found that despite the acquired knowledge, a third of students showed body dissatisfaction (Chavez-Rosales, 2012). Gallardo and Buen-Abad (2011) reported that 50% of nutrition students consume at least two portions of fruits or vegetables per day but also drink sugary drinks on a regular basis. Another study in dieticians showed that almost a third of nutrition students suffer from undernutrition according to their BMI (Gallardo-Wong & Buen-Abad, 2010).

Ponce et al. (2011) showed that nursing, medical and dentistry students consume food from street stands, fast food on a regular basis, and are also accustomed to consuming "takeaway" meals. Betancourt-Nunez (2018) found that HS (nursing, psychology, nutrition, medicine, and dentistry) of one region in Mexico had unhealthy dietary patterns, as they mostly consumed a traditional westernised diet, and this was more positively associated with being young (<22), being a man and being a smoker. Lorenzini (2015) documented that more than half of HS registered in a northern Mexican university had obesity or were overweight. A study from the centre north of Mexico (Reynaga-Ornelas et al., 2015) included not only medical and nutrition students but also physical trainers and psychologists in their cohort of HS. It found that only half of them ate 5 or more portions of fruit and vegetables, and more than half consumed alcohol regularly. Only a few authors were concerned about the views and meanings of medical students' own health practices (Heshiki, 2013).

Barragan-Carmona et al. (2014) found that studying a health science degree had no correlation with being healthy and that 20% of HS develop an unhealthy lifestyle during their training. Rivera (2006) showed that nutrition, nursing, and medical students mostly consume foods made of corn; and few eggs and dairy products. Students face distressful problems and are exposed to diseases when practising at hospital settings (Garcia-Reza et al., 2016). In addition, they develop unhealthy dietary habits (Barragan-Ledesma, 2015; Likus et al., 2013). Schools' demanding timetables can also cause a decrease in Mexican nursing

students' incomes (Garcia-Reza et al., 2016). All these factors can potentially harm students' ability to counsel. Demands put on medical students can produce negative psychological and physical consequences. This turns out to be damaging to students who, on top of this, are stressed due to their life as medical students (Phinder-Puente et al., 2014).
In a study conducted in one of the universities that provided access for this thesis, Lazarevich (2013) found that university students (net necessarily from health degrees) had emotional eating but also strategies to prevent the gain of weight. Apparently, students with altered waist circumference (a measurement to know about cardiovascular risk) had more problems with their emotions when eating, and most of them were women with a family history of obesity (Lazarevich, 2013). Another study conducted on a different campus found that students in college consumed white bread and ate after 8 pm, in addition to their constant cravings for fried foods and sweets. Mexican undergraduate studies represent a vulnerable population due to their precarious conditions to study and because many of them move from their original home, increasing factors for emotional eating, eating disorders and mental health problems (Lazarevich, 2016).

No evidence was found regarding the review question, however, clearly, Mexican HS have unhealthy food habits considering the DNG and the way in which authors assessed this. Additionally, high levels of anxiety and stress were found, and the risk of having eating disorders derived from this too. Nonetheless, reasons, contexts and key mechanisms are not sufficiently explained. With this information as preamble, the rationale to fit in the present study needs to be explained in the next section.

2.9 Gaps in the literature

Most notably, no studies were found in the reviewed literature with a focus on dieticians or nurses directly related to the review question (only role model ideas for nurses). None of the reviewed studies have addressed the aim for this review directly, specifically or explicitly. Only three studies were conducted in similar countries to Mexico and this is relevant given that context for CR is essential to discover further mechanisms (Nairn, 2019) related to the research problem. Findings of correlational studies were not conclusive as they only addressed narrow views of the research question.

Food choices were measured by surveys or questionnaires without mentioning quality of diet or source of constraints for HS to have unhealthy eating behaviours. None of the studies looked at companions for eating, social and cultural contexts or the reasons behind current

food choices, although some suggested this aspect should be researched. Although some authors reported that with adequate knowledge, HS had higher expectation and willingness to consume fruits and vegetable, this might not be achieved and only describes intention rather than action. Studies did not address the question of why for instance, professionals seemed to score higher in the consumption of fruit and vegetables and what are the factors at play here. Moreover, counting fruit and vegetable consumption seem a narrow way of categorising HS in healthy/unhealthy. When reporting that HS believed support from supervisors should increase or changes in curricula should be made for them to have healthier food choices, they failed to offer further information about ways in which this could be done.

With regards to DA, some studies applied a course/lecture/intervention, but these were not sufficiently uniform to assess which components increased counselling on diet and confidence to advise in HS. Furthermore, HS did not seem to improve their own health behaviours and no arguments were provided. Several of these assumed that knowledge in nutrition increased HS confidence to advise, but their results were inconclusive. When providing some reasons of why nurses of instance did not have a healthy lifestyle or food consumption, they did not go further in explaining working shifts were being problematic and how this was affecting role modelling for patients. Some other reported barriers to counsel (physical looks, lack of time) were not explored exhaustively. A weak association was shown between a low confidence in advising and own poor health behaviours, but reasons were not explained. In most studies HS credibility was rated as low and authors actually did not agree on whether nutrition training should be provided to medical students, although only a couple suggested looking further on HS' views. Additionally, no study stated specific views on how HS deal with patients' nutrition/diet in real encounters and in which way HS would use nutrition knowledge. Three studies recognised the role of HS cultural background in the probabilities (statistically) to provide advice, though they did not explain how this was influencing.

The only qualitative evidence also had limitations and left some unanswered questions, for instance, since knowledge did not seem to be a barrier for healthy food consumption, they did not explain then why HS could not/were not consuming them. Qualitative data reported low confidence in medical students, but reasons were not explored sufficiently. One study reported interest on improving counselling practices and some nutrition notions in medical students, but they did not explain how.

Some studies included in the matrix suggested further research to explore various inconclusive associations they tried in their research. Schlair (2012) suggested interviewing participants that have been exposed to clinical scenarios instead of students that are only learning from the classroom or theory. Foster (2002) suggested researching more explanations for the relationship between HS' education and their personal health habits, as well as HS changes on their own health behaviours over time (Keteelar, 2014). Cardoso (2019) suggested further qualitative studies on HS' perceptions about their counselling practices, especially in their last years of study. Blake (2016) suggested further qualitative studies to understand how to improve nurses' health promotion attitudes. Since differences in training stages were controversial for this review, and also for the case of these qualitative studies, suggestions on interviewing students in their last stages were highlighted. Cardoso (2019) represents a highlight in qualitative evidence, although it was applied to future doctors only, who were conveniently participating in another study. In this sense, this research can provide further explanations.

The Mexican literature reported unhealthy eating behaviours (more industrialised food consumption/westernised diet, skipped meals, sugary drinks or alcohol regularly) without explaining reasons (high prices could be a contestable finding given the Mexican context) of both why and how health promotion programmes seemed to work. Body dissatisfaction and low BMI was found in nutrition students, but authors did not explain how this was working to offer DA or to have their current food choices.

In sum, these studies explained a few barriers to providing health advice or having healthy food habits - such as lack of time, shift changes, lack of confidence or credibility, few health promotion strategies targeting these students, etc. Nonetheless, the majority showed that unhealthy food habits might be caused by the lack of knowledge HS (mostly medical) have, and the educational context, which is a complex social process that needs a critical and focused approach. More barriers need to be explored and explained. Only a few authors argued the need for analysing the impact that structures (culture, healthcare systems) have on their results.

Most studies used quantitative approaches that are useful for mapping the possible topics that need further exploration. Assessing DNG does not necessarily result in deep and critical explanations. Questions of "how" and "why" have not been addressed extensively, though presumably there is a relationship with the little advice they offer. None of these studies looked at foodways, and terminology for food choices, eating habits, etc. was used without prior definition. Hence it is remarkable how little attention DA and its relationship with

foodways have had. In this sense and having located the gaps within the current empirical evidence, the research questions are presented next.

2.9.1 Proposed research question

What is the influence that Mexican HS' (or people studying to become health professionals in Mexico) own foodways have on the dietary advice that they provide to their patients?

2.9.2 Secondary questions

a. What are the foodways of Mexican healthcare students?
b. What are the students' mechanisms to deal with foodways' constraints during their academic training?
c. What are the constraint aspects/barriers that surround their decisions on eating? How do they rationalise their own foodways?
d. What type of information do students acquire with regards to dietary advice?
e. What are the students' motivations regarding what they recommend for patients' diet? Do they stick to the DNG? Do they see themselves as role models?

2.9.3 Aim and objectives

Aim: Understand the influence that their own practices, more specifically foodways, have on the dietary advice that Mexican healthcare students offer to their patients/clients.

1.1 Describe and explain the foodways of Mexican healthcare students that are prepared to asses/advise patients in primary care.
1.2 Explore what the students understand by healthy food, and their reference points their training regarding dietary advice.
1.3 Make clear the factors that enable and constrain their ability to eat healthily as well as to recommend healthy food.

Chapter 3 Methodology

3.1 Introduction

The relationship between foodways and DA is affected by context and certain mechanisms (White, 1997) that this research intended to acknowledge. Philosophical assumptions support the selected data collection methods (Carter & Little, 2007). Ontology is "what" can be known about the lived reality and epistemology is interested in the way we learn about the reality (Benton & Craib, 2001). There are different ways to know about the world (Ritchie et al., 2013). The main positivist claim (White, 1997) is that measurable observations can be counted as truth (Chalmers, 2013). Still, "reality" cannot be objective, and it is regulated by human consciousness (White, 1997).

From the literature review (LR), it is possible to ascertain that various authors have acknowledged the importance of doing qualitative research to expand on quantitative findings, which have not explained HS attitudes towards, for instance, healthy eating. Alba et al. (2015) suggested that for future research it was important to understand contextual factors (especially in developing countries), health programmes running in the university, year of studies, and characteristics of training. Since assessing lifestyle is a complex process, qualitative research seems to provide a better understanding more of this complexity (Crowley et al., 2014). Ketelaar (2014) suggested inquiring about the reasons behind health behaviour changes over time, or between two different stages in medical education. If only quantitative answers on self-efficacy have been given, there is no information about the quality or content of dietary counselling. This is also an area where qualitative research can gain some answers (Spencer et al., 2006).

Foodways and the process of DA are shaped by situated knowledge that is influenced by context, culture, religion (Rodriguez-Gazquez et al., 2017). Understanding their influence and constraints involves learning about people's experiences, preferably through qualitative approaches (Alkon et al., 2013). Although most of the key papers analysed the research relationship or some aspects of it, they did it in a quantitative way. Social actors constitute the social world and have certain understandings about this world, but our practices are not always consistent with theories (Benton & Craib, 2001). Moreover, we are not always aware or reflexive about practices that we perform, trusting in our instincts (Maxwell, 2012). Although foodways can be a stand-alone framework that incorporates different elements to understand how people interact with food, no framework should not be taken for granted (White, 1997). A critical epistemology is fundamental, and this section describes the

philosophical framework that underpins my research strategy as well as the plan I used to conduct this research.

3.2 Theoretical framework

Critical realism (CR) is "an ontological and epistemological position from which to research people in their social context" (Walsh & Evans, 2014:2). CR claims the high value of interpretation as a source of knowledge (Ritchie et al., 2013). This is reflected in the relationship between a realist ontology and a constructivist epistemology, which means that the world exists independent of our constructions, yet knowledge is constructed and no "objective" explanation for reality exists (Maxwell, 2012). Participants' views and opinions are critical to understand the reality of the social world they live in (White, 1997). Qualitative research, underpinned by a critical realist epistemology, is concerned with asking "why" and "how" questions (Walsh & Evans, 2014) and is able to integrate complex multiple factors that influence, in this case, HS foodways (Mahoney, 2015) and the kind of diet they advise to their patients.

Bhaskar, main originator of CR (Benton & Craib, 2001), proposes three levels of ontology: the empirical, which is what senses experience, the actual, which is what really happens, observed or not (Edgley et al., 2016) and the real, which exists independent of our perceptions (Corry et al., 2019) and the one which helps us to identify underlying mechanisms for the other ontological layers (Nairn et al., 2012). Structures that are not necessarily seen or felt with the senses but that have (causal) effects or changes under certain circumstances that can be experienced (Bryman, 2015) in the actual domain (Oladele et al., 2013). There is an ontological distinction between causal forces (underlying mechanisms), which involves tendencies, and the events generated (reality) as a result of these forces interacting in open systems, hence people, who normally live in open systems, cannot show a predictable or invariable consequence (Corry et al., 2019). Indeed, some psychological mechanisms can only be explained through social processes (Benton & Craig, 2001) and the relationship between different levels of the real in order to uncover people's motivations (Corry et al., 2019). Although associations are useful and key mechanisms at an individual level were located in the LR, HS foodways should be explained considering structural influences to food (Mahoney, 2015) and acknowledging that a combination of mechanisms can be at work to explain what happens (Porter et al., 2017) with a social process such as foodways.

Counselling on diet and alimentación, and foodways itself are both complex social processes that take place in open systems, and CR recognises the multi-layered complexity of social problems (Oladele et al., 2013). The social world is an example of an open system where "variables" (for instance, people's culture or power relations) cannot be controlled as if it was a laboratory. Although it is possible to use experimental research in the social world, managing variables seems more complex as there might be individual and group variation (Collier, 1994). The different relations between what constitutes DA (individually and structurally) are part of the focus of this research from a critical realist perspective (Mahoney, 2015). To strengthen the present research, it is important to consider contextual constraints regarding healthcare education, and healthcare systems and practices. Therefore findings may be applied only to this context (Ammerman et al., 1993) but findings would also contribute to knowledge on questions that have not been answered yet. Moreover, the contextual political situation needs to be highlighted because the external world has both natural and social components (Nairn, 2019).

The key feature of CR is that different perspectives of reality are valid and fundamental to understanding the mechanisms that explain a phenomenon (Maxwell, 2012). Social mechanisms, which influence human beings, interact with agency, acting as causal mechanisms in a phenomenon (Porter et al., 2017) such as DA. This means that the empirical level has its limits in offering explanations if it does not acknowledge the real level (Fletcher, 2017), or more specifically, structural mechanisms that influence, for instance, the way in which DA is offered or the different strands in which food is consumed; yet it is possible to see the effects. However, a step back is needed to understand mechanisms (Oladele et al., 2013). Underlying structures generate appearances and can at the same time contradict experiences (Collier, 1994). Diet, health, and illness have been analysed from a critical realist epistemology (Mahoney, 2015) with the aim of exploring contextual structures and forces, showing corporate (food industry) influence on policymaking, as well as governments' hesitation to challenge them. CR can guide an understanding of operating systems and rhythms (politics, economics) that influence foodways, but also how DA is provided. However, since we might not be fully reflexive about the impact of these forces (Maxwell, 2012), my task was to research these issues in practical ways with participants (Mahoney, 2015).

A diverse epistemology implies the idea that there are different ways to know about the world, hence this research looked at other theories (chapter seven) and engaged with Foucault's ideas of power or Bourdieu's ideas of *habitus*. On the other hand, realism promotes theories that can not only rationalise, but transform existing practices, such as

foodways and DA. Theories are fallible and open to transformation as well as our knowledge of the world (Corry et al., 2019), as most of what we learn is through our practical engagement with the world. In this sense, underlying mechanisms are discovered by the sciences as things can occur unperceived by us (Collier, 1994). Since CR considers human agency as well as social forces (Porter et al., 2017), it provides ideal underpinnings to examine processes that involve individual reasons and social relations, such as the process of counselling on diet and foodways.

One of the ways in which diet and health have been addressed (e.g. in research on food choices) is through a scientific paradigm. This means that food choices have been considered to be a product of individual biological and psychological behaviours and decisions. However, there is a theoretical framework (CD), with various similarities to CR, which explores mechanisms and entails retroduction. It also looks at underlying mechanisms of, in this case, diet and food choices that might help to answer the why and how questions (e.g. why is difficult to follow healthy advice regarding diet?). Since CD is one of the ways in which diet has been addressed, interpreting my empirical data in light of its theoretical notions was useful and valuable for the discussion.

By having the critical realist lenses underpinning the research relation, a more specific methodology for health sciences is critical to understanding HS views and experiences, and how this sit within the world they interact with. Therefore, the next section will discuss interpretive description as methodology for this research, which reflects the hermeneutic component of a critical realist ontology.

3.2.1 Interpretive description (ID)

ID is an analytic approach developed by Thorne et al. (1997) that seeks to understand social complex phenomena within health disciplines by going beyond mere description. It is driven by the "so what" questions that characterise the applied disciplines and research findings under this approach can be practically applied after fieldwork (Thorne, 2008). In fact, the improvement of practice is driving this research. ID attends to the value of experiential knowledge from clinical insights, and issues are addressed considering time and context (Thorne, 2008).

Knowledge gained through ID can find a new inquiry and add to previous understandings (Thorne et al., 1997). Unlike other approaches, ID is engaged with hermeneutics, which is related to analysis and interpretation of reality (Thorne, 2008). ID looks for associations,

variations and ways in which a phenomenon works. In this way, the myriad of disciplines contributes to add different or similar perspectives. A benefit is that data can interact with theories or previous knowledge (Blaikie, 2007), such as data from food recalls and observation of the food environment to picture a reality.

In health sciences, ID has been used to develop and strengthen the understanding of health and illness (Thorne et al., 1997). However, this knowledge should not only be obtained from the people who experience it but also those "whose accounts reveal elements that are to some degree shared by others" (Thorne et al., 1997:174). Participants' experiences would depend on the perception of their daily lives (Neergaard et al., 2009).

If a theory was the starting point for this research, reality would not necessarily be reflected through this (Maxwell, 2012), yet it can facilitate explanations. Participants' views might question the existing theory (Fletcher, 2017) but this theory is helpful to enable an appreciation and transformation of their reality (Maxwell, 2012). Foodways were analysed through the lenses of CR, and the broader literature of existing evidence contributed to deciding ways of eliciting views from participants. Data generated from fieldwork and previous theories interact with each other, and this is useful for moving backwards and forwards from theory to data constantly (Blaikie, 2007). Holding an integrative view is essential before research is conducted. In this way, it is important to mention how a critical realist epistemology fits into the methodology of ID.

3.2.2 Critical Realism and Interpretive Description

CR and ID are not opposed to each other. A strong interpretive dimension resides within CR because hermeneutics are fundamental to understand culture (Benton & Craib, 2001), which underpins foodways. ID is partly inspired by an interpretative hermeneutic tradition (Thorne, 2008) and CR is also interested in how people make sense of the world and how these meanings have consequences for the physical world (Maxwell, 2012). CR builds a path between theory and practice, by investigating the links between agential and the hermeneutic dimension of the social and broader cultural and structural forces (Oladele et al., 2007). Although there is an interpretivist tradition within CR, there is a particular emphasis in context and social and cultural structures. Context in this sense is relevant, as a failure in recognising a historical influence, might prevent situating this research within certain political, cultural and social situations (Nairn, 2019). Interpretivism puts an emphasis on subjectivity and using it alone would have obscured the discovery of structural factors by prioritising individual views, awarding ontological priority to people's meanings. For

instance, the category of gender, which was barely mentioned by participants, would not have been evident by using an interpretivist approach only, and this is the rationale to use critical realism not only as an epistemology, but also as a methodological tool.

ID seeks to synthesise, theorise, contextualise and challenge data (Thorne et al., 1997) and CR seeks to move between different layers of reality to provide underlying relations (Fletcher, 2017) that describe human perspective (Oladele et al., 2007). Social structures also have a role in causation but have not been extensively addressed, especially with regards to food and its effect on health (Mahoney, 2015). Potential solutions to clinical problems (Thorne, 2008) and understanding how tailored strategies can work within complex scenarios (Oladele et al., 2013) should not be obscured by theories that only address an individual explanatory level (Mahoney, 2015).

CR seeks to improve the interpretation of reality (Blaikie, 2007). Critical insights obtained are not value-free since this topic is being addressed using my professional and clinical background, which adds a valuable understanding of reality (Thorne, 2008). My clinical background equipped me with the tools to manage food diaries and structure what HS reported to eat (chapter four), as well as to categorise the food vendors and to prepare a comprehensive interview strategy, by having background knowledge of the potential barriers and enablers to eat. CR is also committed to transforming unsatisfactory realities (Benton & Craib, 2001), and can guide formative research towards constructing appropriate policies (Oladele et al., 2007). This is an exploratory study as very little information is known about the topic. Analysis, therefore, was inductive and was not informed by a priori theoretical framework (Wahlich, 2013).

Since this study is drawing on CR, an essential question is how the world needs to be for this phenomenon to happen. All data collection instruments in this sense helped to understand the main mechanisms that influence HS's foodways and the DA they provide. The empirical evidence was linked with the generative mechanisms, discovered thanks to the way of analysing data (Collier, 1994). A qualitative research design, which (along with CR) was the lens to learn about foodways and DA, involves moving back and forth between different elements and methods (Maxwell, 2012), which are presented next.

3.3 Data collection

There are various instruments that can help to know what types of foods (and amounts) are consumed by people. However, some of these instruments would not explain the complex socio-cultural constraints that determine foodways (Galvez, 2017). Blake (2013) highlighted that assessing dietary habits through quantitative measurements was insufficient and, although there is a danger of low compliance with the uses of food diaries, these could indeed be a richer source on foodways´ information. Research on food consumption patterns, as well as how these changes over time, is essential for developing prevention strategies for non-communicable diseases (Gray, 2005). Currently, food consumption is viewed as a matter of personal responsibility without acknowledging that there are structural limitations to it (Chen, 2016). Additionally, when there is little or no evidence from a topic, it is desirable to enquire in breadth with a methodology that explains deeply why qualitative research is needed (Schlair et al., 2012).

The focus of the study is grounded in describing foodways' influences and patterns, hence open-ended elicitations are required (Pelto & Pelto, 1978). A range of data sources enhance and contribute to new knowledge (Thorne et al., 1997), and continuous engagement with data (Thorne, 2008) has expanded my ideas since I entered the field. Context is important for CR and is not only a variable but a factor that was considered throughout the thesis. That is why I spent some pages explaining the foodways context as well as created a glossary of terms (within Mexican gastronomy) and looked for Mexico's figures regarding foodways, health and DA. At the beginning of data collection, it was important to gain contextual information (Thorne, 1997) through gatekeepers, and before interacting with participants I observed the food environment as much as possible. To help the reader situating these places, a map of the setting (Appendix 5) was created with legends where the food vendors were established, which makes settings accessible (Denzin & Lincoln, 2005) to the reader, and places this research within a context and space where factors such as the food stands, locals and markets can have an influence on participants' responses. I also tried to provide observations that described differences amongst settings.

In sum, a total of three focus group interviews (FGI) and twenty individual interviews (II) were conducted with a total of twenty-nine participants. Interviews lasted between seventy and one hundred minutes and took place in each corresponding university, inside one of the rooms or near a quiet area where other people could not pass or interrupt. Even when an Olympus digital voice recorder (with low noise and clear sound) was used for the first two

FGI, sometimes the sound bounced, or the voices sounded far away. Therefore, the third FGI was conducted in a radio cabin provided by one university site. Noise was successfully isolated, and better sound quality was possible. More details about these methods are provided in the following section.

Critical realism and interpretive description guided the process of first, designing the instrument (Appendix 6) that was used as an outline to prompt ideas about the topic. Some key papers in the LR helped build the questions for the outline given that some of these questions were already validated, at least with the medical students' population (Wright, 2005). Since CR is interested in understanding the mechanisms that surround the research relationship, several potential aspects of this relationship were translated into questions that were used later. However, this was not used as a prescriptive guide because each individual interview was tailored to what participants reported as foodways. For the FGI dynamic, the interview outline was only a baseline to start some thoughts around the topic. However, there were more follow up questions and probes about what participants were saying and very few questions were asked because there were no follow up interviews, given the richness of data of the first interviews. In the next section, the various methods used for this research are explained in breadth and the importance to collect this data for this specific background is contextualised too.

3.3.1 Methods

The bulk of the study data included interviews, food diaries or applied 24h-recalls, and observation. In addition to this data collection, I always kept a reflective diary with audio or written notes. These notes included observations on staff related to participants or thoughts after interviews. FGI was a reasonable starting point (Morgan, 1996) to obtain information about foodways and the way HS delivered DA. In this way, the interview outline could be improved after reflecting on FGI or II interactions. Food diaries provided specific data on HS foodways. To complement this type of information as well as to elicit the features of DA, II were conducted. Table 3-1 shows how methods were aimed to cover the various aspects of the research questions. Additionally, methods are illustrated in Figure 3-1 with an explanation below this.

Table 3-1 Research question with relevant methods

Research question	Method
What are the foodways of Mexican healthcare students?	FGI, Food diaries and observation
What are the students' coping strategies or mechanisms to deal with foodways constraints during their academic training?	FGI, Individual Interviews
What are the constraint aspects that surround their decisions about eating?	FGI, Individual Interviews
How do the students adapt the information they receive regarding healthy eating to their own foodways?	FGI, Individual Inter views
What are the students' motivations with regards to what they recommend as to diet?	Individual Interviews and FGI

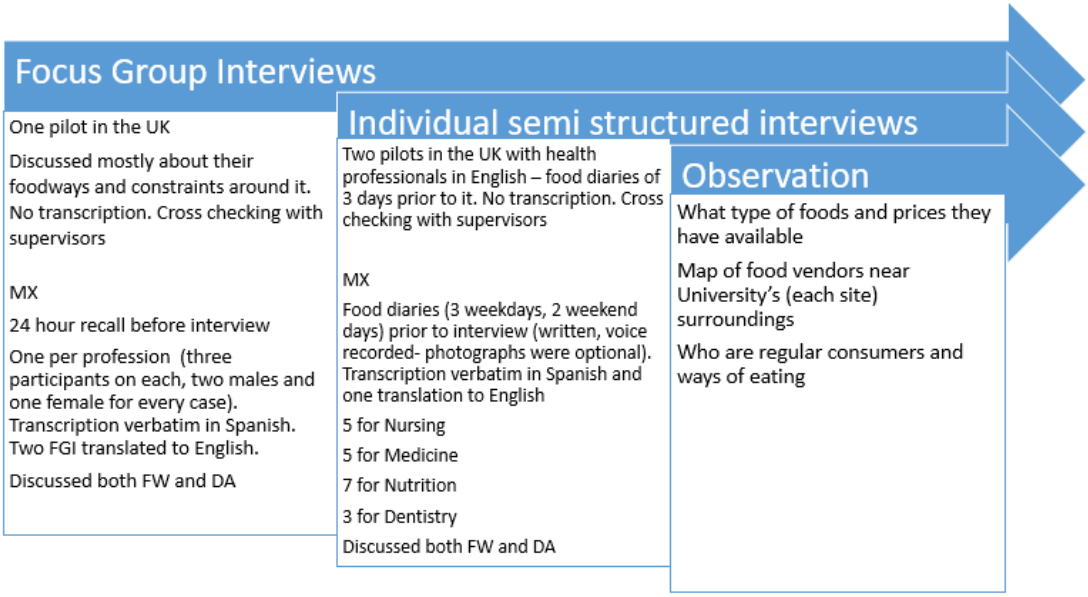


Figure 3-1 Summary of methods

While ethical approval was sought from the University of Nottingham and given my previous experience conducting individual interviews (Tronco-Hernandez, 2016), a pilot FGI was conducted before traveling to the actual setting. Participants were postgraduate students from the School of Health Sciences and had professional backgrounds as a dietician, a nurse, and a food scientist respectively. This group helped me test the interview outline and recognise areas of improvement. Slowing down the dynamics (Goldman & McDermott, 2007) and challenging initial assumptions and reflective thoughts was necessary to amend the dynamic and outline for the pilot FGI. A meeting with my supervisory team helped me increase my confidence and use more resources to then individually interview two health professionals that were studying their PhD in the UK. Interestingly I could access two Latin American women, both with a health professional background: one in nursing, one in nutrition. These three pilot interviews were conducted in English before flying out of the UK

so that my supervisory team could provide feedback, and the interview outline was modified accordingly. In addition, it was agreed that the first interviews were going to be translated to discuss any issues with my supervisors and improve the interview guide, as well as an ongoing part of the research while being in the field.

To answer the research questions various methods were used, one FGI and at least five II for each discipline - except for dentists who were only added at the end of the research with the aim of getting new insights from a different perspective of professionals that do not necessarily learn about nutrition whilst being trained. To offer a broader picture and context of the Mexican gastronomy environment, and to prompt more ideas on foodways to participants, an observation exercise was done where all establishments related to food were signalled in a map of each university's surroundings.

3.3.2 Participants

Inclusion criteria.

1. Healthcare students who belonged to a Mexico's Central Area University.
2. Students that could, as part of their professional profile, discuss food and eating with patients (NOM-008, 2010).
3. Students that as part of their training have been taught lectures, modules or subjects related to nutrition, therapeutic nutritional approaches or nutritional education, such as medicine, nutrition (Muñoz, 2015) and nursing (Cuevas et al., 2009) degrees. The taught subjects should contain notions of diet and counselling on diet or include nutrition as a core topic.
4. Students that as part of their studies were practising (real encounters with patients) in primary care (clinical) settings that are governed by the current regulations regarding the healthcare team.
5. Students that were able to communicate in Spanish even when they spoke other first language/tongue (*Nahuatl, Otomi*, which are indigenous language in some Mexican southern areas (Brown, 1999)). Although the same number of males and females is desirable, this was not always possible.

Healthcare students were defined as: People in a Mexican university, studying degrees related with preventive health (medicine, nursing, and nutrition), who interact (at training stages) directly with patients, and who are also capable of recommending a healthy diet (Anis et al., 2004). Foráneo is a term that has its direct translation in English as foreign. However, foreign is used to define people that are originally from a different country.

Participants in Mexico, however, used this term regularly to self-define themselves as being born/raised in a different city to the one in which they were studying. The definition in Spanish is better represented by “outsider”. For the present research, foráneo for male and foránea for woman (foráneos for plural) was used accordingly to what participants reported as their meaning. Characteristics of the participants from the three FGI conducted are condensed in the following table, which contains assigned pseudonym, sex, age, discipline, type of university and month of the year in which they filled in their food diary. Although these are winter months and at least half of them were on holidays, they were asked to report as close as the normal pattern they would have throughout the year.

Table 3-2 Demographics of FGI participants

Pseudonym	Sex	Age	Profession	University	Local/foráneo	Month of year
Samantha	female	24	Nursing	Puebla Public	Local	January
Gonzalo	Male	21	Nursing	Puebla Public	Foráneo	January
Marek	Male	20	Nursing	Puebla Public	Foráneo	January
Nayla	Female	21	Medicine	MX city Public	Foráneo	February
David	Male	22	Medicine	MX city Public	Foráneo	February
Uziel	Male	22	Medicine	MX city Public	Foráneo	February
Hernan	Male	24	Nutrition	MX city Private	Local	December
Sabina	Female	22	Nutrition	MX city Private	Local	December
Miguel	Male	21	Nutrition	MX city Private	Local	December

Participants interviewed individually are shown next. It is worth highlighting that for the case of Nursing and Nutrition, participants from the same profession that were individually interviewed belonged to a different university than the ones in the FGI. Most nutrition students in II studied at a public university in Puebla. Most participants were foráneos(as). Conveniently, only five participants of each profession showed interest; however, with the aim of providing equal opportunities to participate, all interested nutrition students were asked for their diary and for all who replied, an interview was scheduled. It is clear that more nutrition students were keen on participating.

Table 3-3 Demographics of II participants

Pseudonym	Sex	Profession	University	Local/foráneo(a)	Month of year
Tonya	Female	Dental	MX city Public	Foránea	March
Brandon	Male	Dental	MX city Public	Foráneo	March
Romina	Female	Dental	MX city Public	Local	March
Veronica	Female	Nursing	MX city Public	Foránea	January
Yasmin	Female	Nursing	MX city Public	Local	January
Tadeo	Male	Nursing	MX city Public	Foráneo	January
Roberto	Male	Nursing	MX city Public	Foráneo	January
Silvana	Female	Nursing	MX city Public	Foránea	January
Guadalupe	Female	Medicine	MX city Public	Foránea	February
Benito	Male	Medicine	MX city Public	Foráneo	February
Armando	Male	Medicine	MX city Public	Foráneo	February
Lisa	Female	Medicine	MX city Public	Foránea	February
Dalila	Female	Medicine	MX city Public	Foránea	February
Gladys	Female	Nutrition	MX city Private	Local	December
Valeria	Female	Nutrition	MX city Private	Local	December
Zianya	Female	Nutrition	Puebla Public	Local	January
Verne	Male	Nutrition	Puebla Public	Foráneo	January
Valentina	Female	Nutrition	Puebla Public	Local	January
Ramona	Female	Nutrition	Puebla Public	Local	February
Salma	Female	Nutrition	Puebla Public	Foránea	March

3.3.2.1 Sample

Participants that might help answer research questions (Thorne, 2008) were identified. The strategy used was maximum variation sampling (MVS) through a theoretical sample, which was provided from the topic's empirical evidence. MVS can offer a range of possibilities for potential answers to research questions (Thorne et al., 1997). The sample cannot rely on snowballing since it was ideal if participants have not yet interacted; besides, the aim of MVS is to describe relevant data complexity and variation (Thorne, 2008). Although the same number of females and males was present in each FGI, this had variation for individual interviews, which suggested a gendered issue. I describe more on this topic in the findings

chapters. Conclusions were drawn upon a strong database that allowed finding similarities and differences across data (Thorne et al., 1997). Therefore, students from different stages were recruited, as long as they already passed their nutrition training. According to key authors in the LR, participants that were interviewed were considered to calculate the sample for the present research. Additionally, given the low feasibility of interviewing more than twenty people in the time of the field and what this entailed, decisions were made to include only one FGI per discipline, and between five and ten II per discipline.

For sampling and recruitment purposes, a first contact with the curricula (Burton, 2005) of Nursing, Medicine, and Nutrition was necessary to locate training stages when students learn about nutrition and practice this in clinical settings. Other policies and regulations were read to understand a) to what extent HS were involved in DA when interacting with patients and b) what type of information HS had available for this aim. Flexibility to update the existing literature allowed new ideas to emerge (Fletcher, 2017) hence when some research outputs were shared by the universities where the study was conducted, this was included as part of the discussion and background literature.

3.3.3 Setting

Central areas of Mexico promoted MVS in several ways: almost half of the Mexican population lives there (Acosta, 2007), there is diversity of (well ranked) universities with healthcare degrees (Masters Portal, 2017), which attracts students from diverse cultural backgrounds and cause temporary study migrations (Pelto & Pelto, 1978). Additionally, Mexican HS are being trained in a multicultural setting (Bridle-Fitzpatrick, 2016). One public (with nursing and medical students) and one private (with nutrition students) university in Mexico City agreed to participate. The third university was located in the State of Puebla and allowed students from two disciplines (nutrition and nursing) to participate.

When starting interviews, participants from the private university were revising for their exams and final coursework, and perhaps this was one reason for a low attendance of FGI and II recruitment. They also said that they were struggling with these preparations. In the case of Medicine, the head of the department indicated a specific period to conduct interviews that (according to him) would allow more students to participate given their placement assignation and their lectures. In the State of Puebla, most nursing students were already practising at clinical settings sometimes all day long, and this could have caused low interest/recruitment for the FGI.

For the case of nutrition, seven of the participants were keen on participating individually, which was the highest number amongst all disciplines. Both medical and nursing students interviewed individually were registered in the same setting, and the FGI for medicine was conducted there as well. Nurses in the Mexico City setting were about to graduate after the end of the term, though at the same time they were waiting for their practices to start. For the case of medical students, although they were already familiar with their professors and their teaching-learning dynamic, they always struggled with time.

3.3.4 Gaining access and Recruitment

I am originally from Mexico City, and this is also where I completed my two bachelor's degrees and my master's degree. I was, therefore, an insider who understood that this city is where a myriad of students carries out their healthcare degrees (Masters Portal, 2017). The advantages of being an insider are explained in a later section of this chapter. Due to my insider position, however, as well as due to the feasibility of traveling to other central cities, I conducted my research in Mexico City and the State of Puebla. When approaching universities, being an insider and coming from a foreign university to conduct doctoral research facilitated the procurement of permission to collect my data. After obtaining ethics approval from the University of Nottingham, I presented my project to potential Universities within central areas of Mexico, both public and private. This was done through email or phone, presenting my credentials and following their own guidelines when specified through gatekeepers or their website. The explanation of the project to gatekeepers was the first step towards building trust and rapport (Silverman, 1993) as well as negotiating consent (Orb et al., 2000). The research project was accepted in one public university located in Puebla, which is a state in the southeast of Mexico City that had students with relevant characteristics. After negotiating access with gatekeepers, access was also gained from a public and a private university located in Mexico City.

The first contact was with people at the top levels of the University Administration. For one university this was the Director of the Division of Biology and Health Sciences (Mexico City), and for another, it was the Dean (state of Puebla). The first one cascaded the order to the heads of school (Nursing and Medicine) and the second directed me to the administrator of undergraduate (national and international) academic exchanges and the head of the Health Sciences Department. In the case of the private university, the Director was my former manager when I was teaching at that University (more than one generation ago), which made the process of approval easier and more straightforward. The heads of each faculty/school at the public university in Mexico City wanted me to explain the project to lecturers and

students via a short announcement to the group, therefore I agreed on some dates with the module convenors. It was decided to recruiting participants directly by explaining the study of the allocated groups (according to the inclusion criteria). For the State of Puebla, the responsible people set up a meeting with myself and a group of students that met the inclusion criteria, which allowed me to introduce myself and the project for recruitment purposes. In the case of Mexico City's public university, I set up a date with the module convenors when I could introduce myself and gather contact details of the students that were interested in participating. When students showed interest, I contacted them via email and phone and sent them the information sheet and the consent form (Appendix 7) so that they could look at it, although at every encounter I revised this with them again.

Even though I have a professional background as a dietician, my role in the field was as a researcher. Although I considered how my background may evoke negative emotions during data collection (Long-Solis, 2007), when recruiting and inducting to a group, I made efforts to explicitly say I did not wish to judge their life or food choices. Although as a qualitative researcher I cannot say how someone feels about being interviews nor can I completely reassure participants that I do not want to test their knowledge, I stressed that I was there to learn and to understand students' perceptions, thoughts and practices surrounding foodways; to describe other links with this; and finally give account of all of them for my final analysis. After participants completed the interview, they took a copy of the explanation of the study and they had the contact email to send any further thoughts they had. Finally, accessible data was ensured and will be retained for 7 years as is pointed by ethical procedures of the University of Nottingham.

With regards to participants' origin, medical students interviewed individually belonged to the same setting as the ones in FGI, therefore had the same dynamic academically and food-wise. Nutrition students from II and FGI were from different settings (public and private) and cities. A similar case happened with nursing students - however, all participants, in this case, belonged to two public universities in different cities. Additionally, as one of the inclusion criteria was that they were practising or had already practised in clinical settings, there was a general understanding that they would have access to other types of places/environments to select food.

After completing food diaries/24h-recalls and the relevant interview, a grocery voucher was provided to participants, considering an average amount of time of three hours to complete the whole participation for II, and one hour and a half for FGI. The money amounts were calculated considering the minimum wage in Mexico. Although this is a daily measurement,

the amount was prorated as 1-day wage = 1 hour of participation in the study. In this section general logistics to recruit participants and gain access were explained. The section after that contains processes that were carried out as per the type of interview and method.

3.3.5 Focus groups interviews (FGI)

Group interactions can obtain insights and illuminate issues that individual interviews might not allow (Morgan, 1996). FGI´s purpose is to obtain broad information, reflect on an unexplored topic, and scope out broad issues that could be expanded through later interviews (Ritchie et al., 2013). A cultural system is not necessarily shared but participated in (Maxwell, 2012) and FGI allows us to know about participants' views and experiences (Hyden & Bulow, 2003; Mercado et al., 2002). In FGI, theoretical knowledge interacts with empirical data (Maxwell, 2012), and this dynamic allows us to have a collective view of a social phenomenon, as well as know how participants interpret processes (Mercado et al., 2002) such as healthcare education and counselling practices. In any type of interview, it was important to look at their eating patterns for at least two days, preferably one weekday and a weekend day because these might differ significantly (Bridle-Fitzpatrick, 2016).

There are various disadvantages in FGI, these may not give voice to minorities or people that are often shy and might not talk comfortably (Morgan, 1996); it requires group process skills in the researcher; the confidentiality is not assured, and it is carried on outside a natural setting. However, some advantages are the value of this type of talk, where interactions and debates happen between participants that share a similar background (Ritchie et al., 2013). In this sense, FGIs can be used to elicit themes that can become areas of focus in individual interviews. Additionally, to obtain a general picture of their professional curriculum and of their dynamics regarding foodways and DA, it was essential to use an interview that triggered participants' views to then build up grounds to elicit further questions in the II.

Previous studies with a similar topic have drawn upon qualitative research. Elwell et al. (2013) had seven (FGI) and thirteen participants (II), Frank et al. (2005) had seven students (FGI) and found that this was a helpful method to learn a broad picture of students' perspectives. For the case of the present research, it was decided to conduct a FGI per discipline given that mixing students from different disciplines could have raised power issues, which have been acknowledged before (Elwell et al., 2013). Moreover, students are trained differently regarding nutrition and perform different functions within primary care settings (ISEM, 2017; NOM-019, 2012). The number of participants on each FGI were three, and there were always two males and one female. However, for individual interviews, there

were more females than males. This might be related with gender issues that are discussed in the findings section. The curricular analysis also helped to prompt some questions at the FGI. After every encounter, or period of observation (food environment), or interview, field notes were audio-recorded or transcribed to avoid losing relevant information. Recordings often clarified the field notes, if there were inconsistencies, then these were studied along with the amended outline for use in further interviews.

A guide for interviews (Appendix 6) was designed using various documents. Firstly, Ashwell's (1990) report about food preferences, choices, and selection in various illustrations was considered. Secondly, social changes and shifts in food habits that are stressed by Gofton (1990) were considered along with modifications on time and food technologies. The main themes of the interview guide were: i) aspects about foodways processes, ii) conditions and characteristics of DA and iii) relations with the way HS educate and the way in which they are trained.

The first FGI was with nutrition students and, although I asked to be introduced as a researcher, I was instead presented as a dietician and former lecturer. While this may have helped me to be taken more seriously, it required me to reflect on how best to use what my participants knew about my background most effectively. The FGI was successful in producing a rich dataset because, given our shared background and understanding, I addressed them as I would a group of colleagues (belonging to the same discipline) (Burns et al., 2012). The nursing FGI recruitment was successful although all three participants knew each other, and a couple were friends with each other. Given the different professional background of one of them (who studied nutrition before nursing) and their varied origins, the FGI was effective in highlighting a plurality of views, although the familiarity between two of the participants may have influenced responses differently, as I explain later (section 8.6).

Although five students were registered for the medical FGI, only three showed up. When recruiting participants, many medical students preferred being interviewed individually, although a couple mentioned that they would feel more confident and protected in a group dynamic. Participants in FGI knew each other but were all foráneos from different places. Nonetheless, this ultimately contributed to establishing a rapport, showing important differences amongst their views and the views of students interviewed individually. FGI participants filled in a short food-24-hour recall as a background questionnaire (Appendix 8) with the aim of focusing their attention (Oladele et al., 2007) on foodways, at least at the beginning of the interview. This data was recorded as well as part of their foodways.

3.3.6 Food diaries

Quantitative instruments (e.g. surveys) that describe quantity and type of food, have failed in explaining complex socio-cultural constraints that determine food consumption (Galvez et al., 2017). In most figures and statistics, dishes or recipes do not have a place. People buy foods to prepare and consume them. Perhaps this is why questionnaires and surveys such as frequency consumption would not be useful, as they do not provide information around foodways either (Bertran, 2010). The use of food diaries is a richer source (Blake, 2013) of foodways information and has become increasingly popular, since using photographs for the diary allows people to engage, enjoy (Higginbottom et al., 2016) and reflect about their everydayness. Food diaries promoted a detailed explanation of participants' ideas and selection of foodways and helped me strengthen interactions with participants (Galvez et al., 2017). Although food diaries contained quantifiable information that could extend this research, the focus was on qualitative data that offered a deeper account of foodways. Although self-reported data in diaries could contain biases, this information could be corroborated or contrasted through interviews (Wahlich, 2012).

With the purpose of eliciting what participants eat on a regular basis, food diaries (with the alternative of using audio-recordings or smartphone applications) were required (Appendix 7) from participants prior to the conduction of their II. Foodways are not only related to how food is consumed, but also how it is stored, cooked and served; as well as the social context of eating. Gofton (1990) was particularly useful in prompting participants on the idea of creating a more specific food diary. The requirements for this diary were explained in the consent sheet and when the study was introduced within a group with potential participants, I asked them to write times and places of consumption as well as descriptions of a typical consumption pattern according to their schedule, needs, and environment. Some participants added pictures to their food diaries, which helped me understand with more detail participants' ideas and selection of foodways, as well as strengthen my interaction and empathy with them (Galvez, 2017). Some of these pictures are shown in chapter four.

The expectation was that food diaries could show most of HS foodways, so that the interview could help to elicit salient situations in which it was important to understand the why and how of their foodways. These journals were also intended to offer a picture to the reader of how HS eat currently in a gastronomic environment such as Mexico. Participants used words that are often not translatable and these new words (for the reader) are explained in the glossary of Mexican food (Appendix 2). Since HS could share anything related to

eating (physical states, feelings, emotions) in their everyday consumption, food diaries were a way in which they could link their thoughts and social occasions without having to express these orally. A more visual element was allowed to be used by participants, which were photographs of what they ate or whatever they decided to share (although in some cases this included people with whom they ate) and this helped them making sense of their reality, as well as helping me to corroborate (Brannen, 2005) the information provided in the food diary (O'Connell, 2013), which is a form of triangulation, making this research more robust. Timelines for submission of HS's food diaries helped them recall this information when being interviewed, and the time left for this submission facilitated the formulation of questions that could elicit discussions about participants' eating events (O'Connell, 2013). Food diaries were filled electronically or handwritten without the researcher's presence and submitted electronically (scanned, photographed or in an office file) at least two days before the corresponding interview. The interview outline was then adapted to the salient aspects of what HS reported in their diaries. When transcribing this information, tables were created to populate what all participants chose to report, though most HS filled an electronic diary which facilitated the population of these tables. Diaries were grouped by discipline when transcribed, and then patterns were sought to explain these in the first part of the fourth chapter. In addition, some individual notes were used as prompts for the corresponding interview.

3.3.7 Semi-structured Interviews

Interviews were the main method as this research wanted to know about personal motivations involving cultural or social aspects (Ritchie et al., 2013). In-depth interviews are often called a form of conversation or interaction (Kvale & Brinkman, 2009), or even first-hand knowledge (Thorne, 2008). Interviews can obtain a large volume of ideas (Morgan, 1996), and are useful where some power issues dominate FGI (Ritchie et al., 2013), or where little information is known about the topic. In this sense, FGI had the aim of eliciting aspects that would be then scouted more in-depth in II and with an individual point of view. Interviews provide insights to challenge levels of depth of data (Maxwell, 2012); yet, an individual perspective can be triangulated with a group view, which reduces the limitation that a single method represents and also allows a more solid understanding of the phenomenon (Maxwell, 2012).

When data collection has been done in a clinical setting such as clinics and hospitals, Mexican healthcare staff have shown resistance to talk as transparently and honestly as possible, precisely because they refuse to critique their employers within their job setting

(Mercado, 2002). Therefore Mercado (2002) recommends choosing a setting where comfort and confidentiality are guaranteed to participants. Consequently, the place of interview for this research was in one of the (quiet) rooms in the corresponding University. This could have increased successful rapport (Elwood & Martin, 2000), but could also have generated a power dynamic. This was minimised with the rapport built as an insider and by adopting an open and relaxed attitude when listening to what they had to say about a potentially sensitive/emotive topic, as well as probing with empathetic comments towards what they were saying.

Each participant has singularities, and the nonconforming cases can help to gain variation on explanations (Ragin, 2004) and strengthen qualitative research in general (Mahoney & Goertz, 2006). In the first encounter with participants, it was important to learn more about them, as well as show them that they were in control over their participation in the study (Chen, 2016). Later on, it was possible to identify both similar and nonconforming cases within data. Semi-structured interviews are normally used by health professionals to gain information; therefore, participants could have felt more comfortable with this type of interaction. This type of interview is also called semi-structured because there is a specific setting and time scheduled (Whiting, 2018), like in this case.

From the literature related to the topic, McMahon et al. (2014) conducted ten interviews to inquire challenges of dietary counselling. To discuss healthy food notions, Schaefer et al. (2016) interviewed twenty-five participants. According to this, and considering time and resources constraints, 15 interviews (tailored to their food diaries) were initially proposed. However, while spending time in the field - gaining useful insights from researchers who belonged to one university and realising how keen some participants (nutrition students) were - a total of twenty semi-structured individual interviews were conducted in Spanish within four months and across three settings. II lasted between 50 and 100 minutes and all but three (with dentists, who only filled a 24h recall) included their corresponding food diary to prompt and prepare the interview accordingly. The next section describes the supportive method used in this research.

3.3.8 Observation

It was decided to carry observations on the food environment due to a) my past experience observing how people cook, eat and shared these moments (Tronco-Hernandez, 2016) and b) the need of visiting some mentioned places by participants, trying to collect information such as location, menu, accessibility, price and, when possible, recurrence of HS to these places.

Observation, however, was only done nearby the study settings rather than the clinical ones (hospitals, clinics or institutions within different and broad locations) (See Appendix 5)

At least three hours distributed in the same day or throughout different dates were spent for observation per setting. As there were three settings, at least a total of nine hours was spent for observation. Sometimes I would purchase a taco, a tamal, a *comida corrida* or a torta to understand their views about food and to be more empathetic with them before continuing interviewing. In Mexico, food vendors (people in general actually) are quite talkative and they would often mention who their best clients were, with times and occasions. Prices of the most visited places were generally affordable on a student budget, and the people gathered per stand or local varied. Further data is explained in the fourth chapter.

3.4 Language and cultural dimensions

The chosen setting was where I grew up, raised and educated; therefore, I was an insider that could have a better approach to participants. Being Mexican as well as a dietician allowed me to understand interactions and vocabulary (or technical jargon), though an important task was promoting participants' engagement (Morgan, 1996). Interviews' transcriptions were done in Spanish. As a dual language speaker (Spanish and English) I carried on translations myself considering Brislin's model of translation and back-translation (Appendix 9). The first couple of interviews were translated and discussed with my supervisors to consider linguistic, translation or content issues before the next interview. This task of translating to English continued for one more interview and key extracts until I felt enough confidence and practice to address difficulties during the remaining interviews. During the process of translations, there were various issues such as alimentación, foráneo (previously explained in the main text) and some foods such as *chile* (instead of chili), pozole, tamales that have been used by other foreign authors with the original name (Pilcher, 2005). The glossary for Mexican food and essential Spanish terms (Appendix 8) provides a concise and succinct way of getting more familiar with unknown terms that were highlighted in several interviews.

So far, the epistemology and ontology that underpin this research were explained as well as the different methods that were used and supported the collection of data. The grounds for inclusion criteria, sampling and settings were described. An essential way of making this research transparent and accessible to the reader is carefully explaining the process of data analysis, which is presented next.

3.5 Data analysis

Qualitative research is interpretative; thus, the knowledge is constructed (Maxwell, 2012). From the fieldwork, notes are taken and then manifested in the research text to make sense. Finally, this text is converted into a public text and may assume forms such as critical, analytic and so on. Qualitative research, however, causes contradictions, tensions, and hesitations (Denzin & Lincoln, 2005). Initial interviews were crucial in this exploratory stage (Pelto & Pelto, 1978), and familiarisation with transcripts helped examine (Thorne, 2008) the first reflective thoughts carefully and logically prior to coding. Thematic analysis includes discovering and reporting clusters of meanings (Ritchie et al., 2013). Patterns and commonalities emerged from individual variations (Thorne et al., 2004).

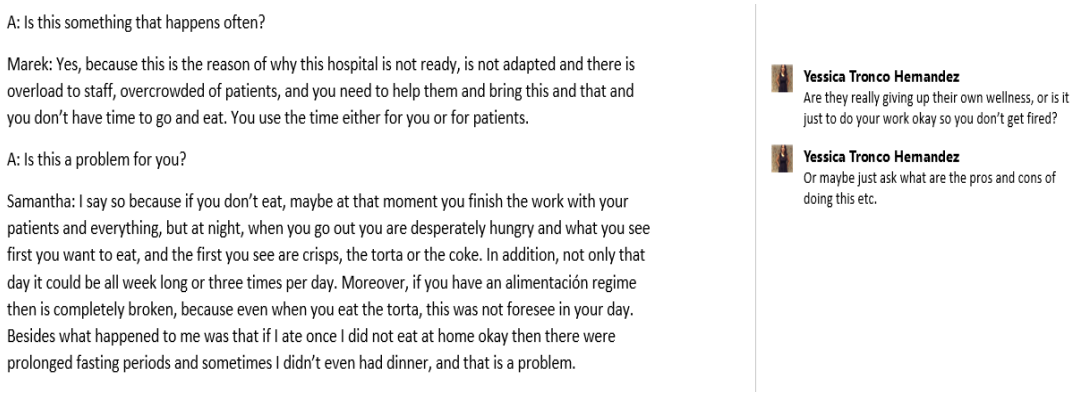
CR looks for different mechanisms that generate a variety of outcomes (Fletcher, 2017) but above all, explanations for findings. An important concept was retroduction, which allows us to go from observations to explanations and produce empirical evidence of phenomena (Blaikie, 2007). This strategy can use qualitative approaches that support explanations beyond the empirical level, which in this topic includes the relationship between healthy eating and the financial (Mahoney, 2015) and social situation of being a student, for instance. Mechanisms are also searched and explained (Blaikie, 2007), by moving back and forth from theory to data. Abduction is a strategy that, instead of answering research questions with explanations, it offers understandings (Blaikie, 2010). The analysis moves from the everyday accounts of participants or descriptions of their social life to the hermeneutic process of scoping the meanings of these accounts (Blaikie, 2007). After this, it is possible to study more on the social and cultural conditions that generated tendencies (Fletcher, 2017) in the data.

The analysed data was constituted by what students said in the interviews, what they recorded about their foodways in the food diaries, and the observation notes and maps. From finding patterns came a decision about the appropriate type of coding. Immersion in the data allows a better understanding of influences that have an impact on what students choose to eat and how they make sense of the advice on the diet that they offer. In addition, data collection and analysis happened concurrently with breadth at the early stages of coding. Notes taken immediately after the encounters with participants, interaction, and during the process of observation were part of the data analysis. Extracting data from diaries, for instance, was done through stages, first emptying participants' answers on a database that contained spaces to fill (time, day, contents of each meal, feelings/emotions), and then

identifying patterns, similarities, and differences across and between disciplines Transcribing and developing themes was done using inductive thematic analysis which was based on critical realist epistemological assumptions (Lipscomb, 2013). Lipscomb's template analysis was essential and straightforward to use because it draws upon a critical realist view of thematic analysis, which helped to form clusters. Later, Attride-Stirling's (2001) notes on thematic networks helped in narrowing down themes into basic, global and organising themes.

After interviews were transcribed verbatim, these were read repeatedly to code these line by line in order to assign conceptual labels within the data. The interview outline helped in a way to organise the themes that were covered when conducting the interview. Additionally, after each interview, reflective comments of potential themes were recorded and, after finishing the transcription for that interview, a brief summary was written along with reflexive thoughts for each participant. These helped with the familiarisation of transcripts as well as to identify themes between conceptual labels. The precoding and analysis process were performed and is illustrated on the steps that follow:

1. Transcription of the interview, reflective thoughts, and summaries. This excerpt is an example of how an interview was transcribed (in Spanish but written in English for illustration purposes here). When reflective thoughts arose after reading it or while transcribing, notes were put a note to the side. These notes could be helpful for analysis or for upcoming interviews. Within the first interviews (translated for the supervisory team), I was looking for contrary cases (Thorne, 2008) that allow richness in data. These translations also served to corroborate the analysis process with my supervisory team. In any case, all written or spoken recorded reflexive thoughts were in English, as this allowed a more straightforward analysis and facilitated the translation back-translation process.



A: Is this something that happens often?

Marek: Yes, because this is the reason of why this hospital is not ready, is not adapted and there is overload to staff, overcrowded of patients, and you need to help them and bring this and that and you don't have time to go and eat. You use the time either for you or for patients.

A: Is this a problem for you?

Samantha: I say so because if you don't eat, maybe at that moment you finish the work with your patients and everything, but at night, when you go out you are desperately hungry and what you see first you want to eat, and the first you see are crisps, the torta or the coke. In addition, not only that day it could be all week long or three times per day. Moreover, if you have an alimentación regime then is completely broken, because even when you eat the torta, this was not foresee in your day. Besides what happened to me was that if I ate once I did not eat at home okay then there were prolonged fasting periods and sometimes I didn't even had dinner, and that is a problem.

Yessica Tronco Hernandez
Are they really giving up their own wellness, or is it just to do your work okay so you don't get fired?

Yessica Tronco Hernandez
Or maybe just ask what are the pros and cons of doing this etc.

Figure 3-2 Screenshot of an interview's transcription

2. Read each interview one to two times to start the process of precoding interviews per interviewee. I started highlighting, with colours, aspects that belonged to the explained categories of the interview outline and started categorising them into labels at first glance. This was done with the hard copies of each interview, using different colours to both differentiate and show overlapping - for instance, when a single paragraph or answer was categorised into two or more codes.

3. Interview coding: excerpts or sentences belonging to the same colour (code) were cut (from hard copies) and pasted with those who shared a broader theme. These were later distributed in the first electronic template (see below). This case is illustrated with one example from nutrition students' interviews.

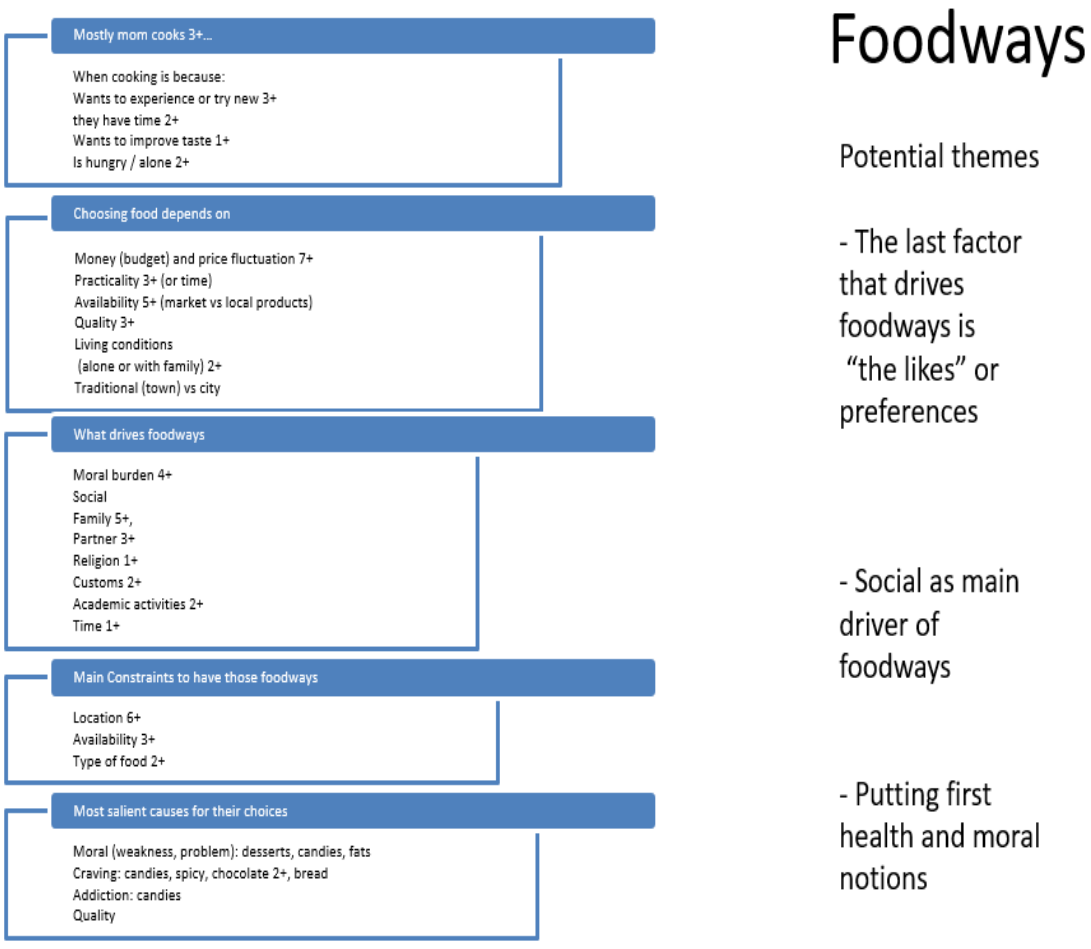


Figure 3-3 Screenshot of slide (nut students) for analysis

This is an example of how some of the aspects of foodways were related to whom prepares food for participants, and in which situations they cook. In this case (see slide above), the aspect that was discussed was foodways which was outlined in the interview guide. The answers were grouped, and the numbers next to each answer are the number of mentions the

answer had, irrespective of whether this was with the same interviewee, during the same interview (FGI), or from different participants. The drivers of foodways, as well as the main constraints and potential causes, were specified below. The sentences at the right side of the slide emerged from reflective thoughts after structuring these codes and were considered throughout the thematic analysis.

4. Coding interviews per discipline and grouping findings. Once all codes were available, answers were grouped into various levels. The more levels (indicated through the indent), the more detail and the less abstract. There were no more than four levels of codes. An example is shown for the case of medical students (see below). The first level here is foodways, and the aspects of them are underlined. In the case of constraints related to their activities (second level), their living conditions were divided into their circumstances (third level) in italics. These circumstances were divided depending on whether students lived alone or not. The different levels of coding show different responses to the questions, for instance on aspects about choosing food (what do you normally eat?) every line is a different response - normally from a different participant, but the response could be from the same student at a different moment of the interview.

FOODWAYS

Involvement for preparing food
- Mom usually cooks and leave food for few days, she cooks the basics
- Feels lazy to prepare food
- The landlady prepares the food and she doesn't have a choice but eat it

Choosing food
- Student with NRD chooses natural food for her sake - former ketogenic diet felt ill
- She does her shopping when time allows every 1 or 2 weeks / over the weekend
- He would think what he wants at the moment of consumption
- Doesn't buy that much due to money
- "Lazy" to look for food
- He tries to use seasonal fruit, ciabattas and salads at the school

Food consumption
- Nervous laughter when they "confess" to eat junk food regularly
- What and when she eats depends on practices and school schedule
- When she is "tired" of "healthy" food she eats
- Keeps a schedule due to NRD / Depends on who is supervising on hospital
- She eats vegetables in various ways because only on salads is "boring"
- Orders food to take away or that is easy and quick to prepare, practical and quicker
- Eats a lot times per day / breakfast is quite early therefore hunger more often
- Tries to eat in clean places and also variety of vegetables
- Tries to add more vegetables to his tortas

Constraints/ characteristics related with their activities
- Stress, economy, need of filling foods, cheap / reluctant to discuss money and food
- Difficult to transport food (has to be tiny and quick to eat)
- Time and money constraints to eat what she would like / has no fixed times to eat
- Studying while eating / no fixed activity whilst eating / reading using cellphone
- Lack of time to cook
- Depending of time of the day, seasons and costumes she chooses to eat
- Moderates food expenses
- *Living conditions*
- Tension with being on track due to all her responsibilities (of health and academic)
- At home the availability and variety increases
- Time constraints due to schedule of medical studies + the more advanced the degree
  - *Live alone,*
  - Local vs. foráneo (family support) / foráneo it what is already prepared
  - She have economic freedom with all craves and food she would like
  - Used to eat in cafeteria
  - *Living with family,*
    - Practices adapted to familiar ones + or for some time
    - When visit family chooses full meal

Figure 3-4 Screenshot of analytical template from analysis

5. Preliminary themes. The number of times that students from certain professions mentioned these aspects, was considered in the way, aspects were categorised, and from this, some preliminary themes with their subthemes emerged. A similar sheet (see below) was created per profession, and it was possible to then recognise the most mentioned aspects and to which element of the research relationship these belonged. When categories were ready, a third reading of the transcripts was done, and some statements were organised (figure 3-6) to feed a mind map that helped renaming these subthemes into themes. In the end, there were some themes named

"miscellaneous" that were not considered as they were not particularly relevant for the research relation.

NUTRITION STUDENTS

1) MORAL/ETHICAL VALUES SYSTEM 31+
   a) Emotional eating (guilt) 5+
   b) ATTITUDES AND BELIEFS 26+ (some stereotypes about Mexican life, Mexican food, etc.)
2) SOCIAL 27
      i) Alone 4+
   b) FINANCIAL ASPECT 17
   c) TIME CONSTRAINTS 12+
3) KNOWLEDGE 16+ (also tension between Knowledge and application> first wins to the other)
   a) Preach knowledge 12+
   b) Educational/Pedagogy 9+
4) Foodways (other constraints/enablers)
   a) Availability 12+
   b) Quality 9+

RESERCH RELATIONSHIP

Moral influences 3+
Defiance between Knowledge vs Actions / Eat in the street VS Credibility
Tension between Image & Knowledge, Empathy &Image

Figure 3-5 Screenshot of preliminary themes per discipline

NURSING STUDENTS

1. HEALTHY/UNHEALTHY
    a. It's a determinant so they can make food choices (by nutritional content, effects on body (especially of carbohydrates 6+), hygiene-streets) or to classify foods in terms that are not necessarily applied for them (hence patients) but are determinant (certain foods) to have (or not) a healthy life
    b. They advise "healthy foods" when they don't eat them (5+), moreover they consume "unhealthy" (5), some offered reasons such as functional effect, economy and family influences

2. MORAL
    a. They seek health through moral aspects related with health or food: use constantly words such as: moderation, less/more, controlled, fixed, rules (hospital, teachers 2+), no deviation, resistance, frustration, forbidden, punishment, and restriction. Some believe expensive and healthy foods are the best for consumption
    b. They notice that patients bring WRONG doctrinal/religious attitudes (5+) towards food and they seek to change them through CORRECT attitudes (7+)
    c. They also see doctrinal attitudes in the nurses (professional): nag, rude and in other professionals (4+)
    d. EMOTIONAL EATING
        i. Some reported this happened is being sad, busy, excited and that their emotions were also related with their own health/illness issues
        ii. Chocolate and sugary products* were mentioned as craves

Figure 3-6 Screenshot of one step before using thematic networks

6. Final themes, meta-themes. The narratives of the participants did not make categorical distinctions, so themes emerged from the data into the two main elements of the research question: foodways and DA. A relational approach to knowledge helped in grouping the data into themes, and the final stages of analysis were supported using thematic networks to help integrating the overlapping themes. Drawing on Attride-Stirling's (2001) idea of thematic networks, the basic themes belonged to an organising theme which was encompassed by a global theme. In this

way it was possible to organise the key mechanisms that underpinned what all participants from all professions said. An example of how various themes were grouped in a thematic area is shown in table 3-4, which shows the thematic area of Mixed Emotions, containing how students have various degrees of emotional eating, and also struggled with their internal states and manifested the moral consequences of certain eating practices.

Table 3-4 Use of thematic networks

Mixed emotions	▪ Emotional eating ▪ Dealing with mental health issues, internal states and emotions ▪ "Good" to eat

7. Overlapping of themes and creation of thematic areas. Many reflective thoughts evolved to allow group themes that were overlapping and after critical analysis, the construction of categories (which are the underlying mechanisms) made sense for the data analysis. In the part of the column a theme or meta-theme is specified and for the rows, the subcategories that include the final themes translated into sections of the thesis, are shown. The master template shown later (at the beginning of the findings chapters), demonstrates how all themes were grouped in thematic areas.
8. The last stage of the thematic analysis emerged from making sense of how the thematic areas (empirical data) could move to theory (categories). Themes are not separated entities and the philosophical principles of this research did not allow to reduce participants' narratives to categories only. However, a relational approach to knowledge allows to find the key mechanisms at work through the understanding of these themes and categories. This final step that brought the theory and the empirical evidence to find answers to the research questions was the trigger for the categories presented in chapter seven.

3.6 Strategies to ensure rigour

One of the advantages of this research was the richness of data irrespective of the type of interview, although group interactions were highly useful to challenge or supplement an idea so that this was clearer. This richness also helped in shaping and improving the outline for II. Rapport building started before the actual interviews, and in the case of FGI, some refreshments were brought so that an informal environment could be created to allow students to explain freely their opinions; though they were inside an academic setting and some power imbalances could have been shown (Timmons & East, 2011). Although there

were clearly some challenges by using various methods, since a similar topic has not been researched before, it was necessary to secure robustness in the ways of collecting data. (O'Connell, 2013).

To avoid issues of representation and legitimation, it is important to avoid the stimulus that the researcher might represent to the participant, either positive or negative (Pelto & Pelto, 1978). Although some quantities of food, time and quantitative data were collected through the various methods, these can be saved and used for post-research purposes, as the main focus of this research was to obtain the richness of qualitative information. To reduce bias and to achieve dependability, external audit (Cohen & Crabtree, 2006) with my supervisory team was done, as the first transcripts were translated into English to discuss with them. Also, some quotes are provided for the reader to find a relation between interpretations and the provided evidence (Wahlich, 2012). Epistemological integrity was achieved since assumptions demonstrated congruence with my epistemological position (Thorne, 2008). Some other quality criteria taken from a Critical Realist epistemology (Davies, 2008) to enhance the robustness and trustworthiness of the research is explained next. Credibility includes regular field notes that justify the analytic reasoning process (Thorne et al., 1997), and also explicitly explain the potential impact for communities (Maxwell, 2012). "Examining cultural behaviour with a variety of different approaches greatly enhances the credibility of research results" (Pelto & Pelto, 1978:121). Credibility was also achieved by:

- Using multiple sources to picture a reality (Cohen & Crabtree, 2006), also called methodological triangulation (Thorne, 2008)
- Being an insider – an aspect that is explored throughout in this section
- Data contrasting (Thorne, 2008) with analytical thoughts form the supervisory team after reading translated interviews

Differences, variations, and contradictions help to develop explanations, although not necessarily predictions, for open systems (Davies, 2008). Transferability was achievable with detailed and precise depictions of the time and context (Cohen & Crabtree, 2006) in which I developed my research. Interpretive authority was sought with the data provided on food surroundings (map), a curricular analysis that was mentioned in chapter Eight, supportive research articles provided by academics from one of the settings, and the use of various methods for data collection. Coherence is shown by also making the analysis process transparent (Thorne, 2008) such as the steps explained in the section above.

3.6.1 Reflexivity

Finlay (2002) defines this concept as "thoughtful and conscious self-awareness" (Finlay, 2002:532). It refers to how I can make sense of the world, acknowledging that there are forces and constraints that shape us. The reflexive diary is used to give an account of my influences on the research (Lincoln & Guba, 1985). Observations on self-behaviour and responses to others contribute to reflexivity (Crabtree & Miller, 1999) since all these thoughts were emerging from my particular perspective (White, 1997). Considering the importance of reflexivity for qualitative research, the implications of my role in the collection of data needed to be acknowledged (Thorne, 2008); I elaborate on these throughout the thesis. My reflexive diary contained personal experiences, beliefs, and values that were constantly questioning the preconceived ideas (Maxwell, 2012) I had. Acknowledging this before traveling to Mexico, as well as during and after data collection, was crucial in obtaining the analysis I present in later chapters. Some reflexive thoughts I had before entering the field are presented in Appendix 10.

In qualitative research, it is essential to revise and reflect on how the researcher was influencing research with her decisions. In my case, although there was at least one generational distance from my participants, a couple of gatekeepers told me that I looked younger than my age and this may have helped to establish a rapport with participants. In a couple of FGI, I brought refreshments and my own food, and this showed that I belonged to the Mexican culture. My social role included being a researcher coming from England but since my Mexican Spanish was perfect, I explained to my participants that I needed them to tell "the English" how and why we ate in Mexico the way we do, as well as how our clinical practices and experiences with patients were. On this premise, they were able to articulate, for one, definitions of Mexican dishes and for another, how things were done in Mexico in terms of studying a healthcare degree. Although I have been told in the past that my facial expressions do not encourage people to talk, I was able to reflect on that constantly so that this was not a barrier with my participants. I had regular rehearsals in front of the mirror or with different people to avoid offering a blank expression that could prevent participants from sharing important aspects with me. Now some thoughts regarding my insider role are described.

3.6.2 Insider/outsider

My clinical background and experience were valuable for ID (Neergaard et al., 2009). Although the world is theory-laden (Fletcher, 2017), no theory can claim phenomenon

accurate representation (Maxwell, 2012). Sufficient grounds on the discipline were necessary to discern boundaries for the research. The research design situates the researcher in the empirical world and connects her to specific sites, persons, groups' institutions and bodies of relevant interpretative material, including documents and archives (Thorne, 2008).

Looking back at my situatedness (Woodward, 2008) perhaps my gender, age and looks had an influence on my participants although nobody mentioned this explicitly. Perhaps my professional background as well as my Mexican origin enriched my interview outline and went beyond explanations that participants offered. Although I was not invisible (Woodward, 2008), no nurse or medic knew about my nutrition background. I was introduced as a dietician with nutrition students. As a Mexican, I had benefits such as being relatively familiar with the food and cultural practices as well as relatively straightforward access to information. However, it was challenging to step out from my professional background (Thorne, 2008), as my lived experience could have both prompted more ideas on foodways and affected the interaction with the participants, therefore affecting the knowledge produced (Ganga & Scott, 2006). I am a 33-year-old woman, have normal BMI and try to have a balanced and healthy life; to me, that means eating a fair amount of food (whenever possible Mexican/Latin American as I live in the UK) to maintain my weight and fitness, and exercising every day. During my past experience as a clinical dietician, I have used some of my personal strategies with patients and have sometimes used patients' strategies with others to encourage weight loss and an optimal sports performance. Whilst being a lecturer for nutrition students I formulated and hold the personal belief that my own experiences with food can aid and encourage DA. However, the only direct contact I have with this research question was during my PhD, although I have previously obtained foodways from participants (Tronco-Hernandez, 2016).

During the interviews, I used some prompts, or some figures related to situations or scenarios that I have used as a lecturer. This has the aim of triggering some reflection beyond the explanations that have already been given. For instance, when nutrition students said eating in the street was unhealthy, I told them about the historical existence of street stands. They then tried to seek different explanations and I noticed they were not aware of this historical account. I did this with the intention to prompt alternative explanations, perhaps missing their own explanations and experiences about it. However, I did not feel the history of food in Mexico was a sensitive enough topic to avoid these prompts. Firstly, because the social aspect of food has not been explored in depth, and secondly because I know that perhaps the professional training teaches us to draw in explanations about hygiene rather than consider street stands as part of our culture. Although it could be argued that I was

displaying biases stemming from my field of study, I felt I could indulge them for the sake of providing prompts towards alternative explanations (Woodward, 2008).

I took care of what could have been an excessive subjectivity (Woodward, 2008) when interviewing different participants than the ones in my field, and by using participants from two different settings when interviewing nutrition students (which is my background field). My gender could have a positive influence first, with gatekeepers (most of them males) and secondly, when recruiting more women than men (unintentionally) (Mandel, 2003), as well as when prompting FGI with alternative explanations to the issues around the topic. However, I am more inclined to believe that my professional background, my familiarity with a university environment and my status as PhD student within an international environment were more influential than my gender, age and insider status.

To take a critical distance (Woodward, 2008) I spoke with other researchers that were not Mexican or did not belong to this educational system (or university). It also meant that I went to universities that I was not familiar with and sought their permission. However, my insider position could have been the main cause of why doors were opened to me (at least for the case of one setting) and I was able to make observations. The interactions with these researchers allowed me to interview three dentists to complete my data collection.

Trying to be an outsider amongst disciplines that I was not familiar with was an easier task. It might be that in the FGI with medical students, my presence was less influential than for nutrition students. My role as an insider allowed me to understand the way in which the education system in that specific university worked, but I was an outsider as I have not had any interaction with these specific participants before, neither as a colleague, nor as a lecturer or any other role. Perhaps being an insider did not help to challenge my own assumptions about clinical practice ad healthcare education, but more so about the food environment; for instance, I did not note that food sellers appear to hold gendered roles, yet I have known this all along. Only men sell *tacos* (masculine noun) and only women (rarely helped by a male) sell *quesadillas* (feminine noun).

Nonetheless, having the opportunity to discuss food choices and constraints to offer advice on food has proved to be controversial enough and participants were able to open themselves not only by saying what was socially acceptable but by talking about these issues with their peers (and talking on behalf of other peers). Additionally, I helped to tackle this issue as they did not have other social influences (pressures) except for the presence of a researcher whose professional background (as a dietician) almost all participants ignored (except for one

setting that I explain below), as this was disclosed neither at the recruitment stage, nor in the information sheet, nor during the interview. In the next section, some ethical considerations are described along with the strategies taken to minimise issues.

3.7 Ethical considerations

It is important to acknowledge the ethical responsibilities of how recruitment was done and how the study was carried out. Purposeful recruitment was employed. Since I conducted the FGI for nutrition students at a private university in Mexico City, it was the first place where I was introduced. Given that I used to work there more than three years ago, I was introduced as the teacher dietician in front of the students, not as a doctoral researcher in health studies (as I was introduced for the rest of the settings). This could have had an influence on how some dieticians wrote their food diary, but when analysing the data, I never observed a relevant difference between these nutrition students and the ones from the public university in Puebla. Rather than being a disadvantage, knowing that participants from the nutrition FGI knew I was a dietician allowed me to "talk amongst colleagues" and they were able to express more specifically their thoughts, as it was a general assumption that I understood general healthcare terminology and academic conditions. This could have influenced my way of phrasing sex/gender as "male" and "female" rather than "men" and "women". This was prevalent until I presented various issues related with gender in the findings and discussion chapters. Therefore, the use of terms for clinical practice or for dietary prescriptions helped them to increase their confidence when talking about nutrition issues or challenges of the profession.

There are three important aspects to consider in qualitative research: rapport, potential intrusion, and harm (Silverman, 2016). In-depth interviews might deal with sensitive issues that personal stories elicit. In accordance with the autonomy principle, interviewees should be made to understand the kind of relationship they are asked to participate in, and be informed that they can withdraw from the study if they are not feeling comfortable with sharing their experiences (Crabtree & Miller, 1999). Autonomy is also respected by making participation in the research voluntary (Orb et al., 2000). Recorders could have been switched off at any moment to protect respondents' privacy and identity and to keep them from any potential future or present harm (Crabtree & Miller, 1999).

Some power imbalances could have emerged from the way module convenors introduced me, as perhaps some students may have felt obliged to sign up. In an attempt to decrease this influence, I passed on a list where everybody had to write their names but only those who

wished to be contacted would tick the box and provide their number. In this way, everybody wrote but not everybody agreed to participate, and I did not look at the list until I was out of sight of the group.

In accordance with the principle of non-maleficence, I asked questions related to the improvement of DA for themselves or future generations, since, as explained in the last chapter, I believe this research can produce several benefits for future students (Gillon, 1994). To prevent self-frustration or emotional exhaustion, knowing there was no simple formula (Silverman, 2016), I could get support from my supervisors. To preserve the principle of beneficence, when observing the food environment and drawing the maps of the food stands, names of streets or universities, names of the locals, owners or any other information were not identifiable. No identifiers (such as the actual name of the nutrition-related disease, when mentioned) were disclosed, and moreover, all testimonies were anonymised (using pseudonyms) and translated into English. Although NRD (nutrition-related disease) is not a well-known acronym around the world, this was used throughout the findings and following chapters to preserve anonymity of participants that nevertheless reported to have a disease normally linked with nutrition and diet.

Participants were reminded of the study and their right to withdraw at any moment on the first contact when they were contacted to set up the FGI, when asked to write food diaries, and at the time of the interviews. To reassure them about confidentiality, apart from the consent form, and because interviews were conducted inside university settings, they were told that we could stop recording for whatever part they felt uncomfortable sharing or for a distressful topic for them. When transcribing interviews, I decided to use pseudonyms with the combination of letters that they provided to create a unique key-code to be identified as participants. This seemed more personalised rather than saying nurse #1 or dietician #2. Moreover, the use of pseudonyms can help to follow the extracts of one specific participant making evident his or her struggles. These names were not shared with them or anybody else and I am the only one who knows who they correspond to. For the case of participants that had a nutrition-related disease, this was not evident in the excerpts that were used, in order to prevent them from being easily identified in publications by the gatekeepers and the heads of school. Most participants ignored my professional background, which may have allowed them to speak more freely about nutrition and diet-related topics, their own dietary issues, and counselling on diet; only very few asked about this at the end of the interview, where I was able to explain. However, nobody changed their mind about sharing something, nor did they regret having shared all they said at any point during fieldwork or afterward.

Cordial relations were always maintained with gatekeepers and participants to build rapport, gain trust and enable communication between two Mexicans with a similar cultural background, with shared understandings of the Mexican food environment. Although some of them were very brief when filling their food recalls or food diaries, successful rapport was established with most of them, and this enabled them to go deeper about these recalls during interviews. I shall share with the universities' authorities any publication related to this research (Orb et al., 2000).

3.8 Summary

This chapter presented the epistemological tenets and the selected methodology used to answer the research questions, along with some contrasts with other methodologies. After this, each method with its rationale and its application was presented, and the way of gaining access with gatekeepers and how the process of sampling and recruitment was followed. Each methodological tool has its uses, features, and processes, and these were described just before mentioning some language and cultural dimensions. The plan for data analysis was explained and some notions on how this research can be considered sufficiently rigorous followed, finishing with some ethical considerations and the importance of constant reflexivity as grounds for situating my role in the field and across the process of data collection and analysis. In sum, an overview of what I have produced in this chapter is shown in Figure 3-7, which incorporates the different elements that I used for this research.

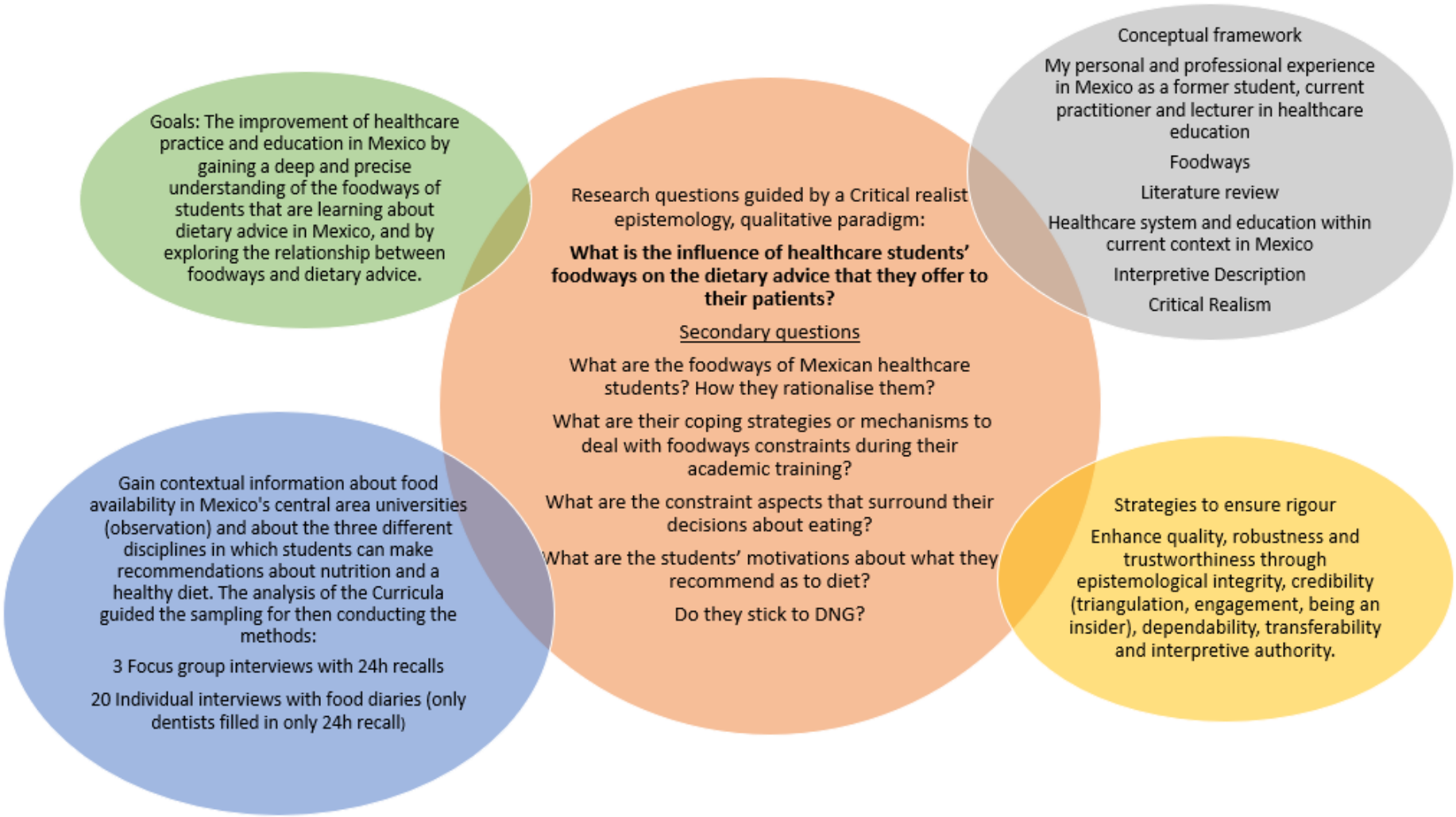


Figure 3-7 Overview of research strategies

Chapter 4 Foodways, what HS recorded to eat

> *"I paged for hours through well-worn cookbooks in search of the original recipe for mole poblano but was always distracted by my grumbling stomach… some of the expectation I felt each day, waiting anxiously for two o'clock when the neighbourhood fondas fired up their grills." (Pilcher, 1998; X)*

4.1 Introduction

In order to highlight differences and similarities across participants, they were referred to by their professions (e.g. nurses instead of nursing students, dieticians for nutrition students, medics for medical students and dentists for dental students) throughout the thesis. In this chapter, I analyse the findings related to HS foodways from data obtained only through written records (food diaries and 24-hour recalls). This data, in addition to some comments or clarifications made during interviews, is different from the empirical data obtained during the interviews where participants draw on their experiences and views to discuss foodways, their constraints and enablers. This is presented in the next chapter, which gives an account of the way in which foodways influence the DA that HS offer to patients.

For the first part, it is crucial to understand the Mexican context, hence a glossary of Mexican gastronomy is presented in Appendix 2. Firstly, I analyse the data that various instruments (food diaries, 24-hour recalls, and some notes or additional comments from HS during interviews) allowed me to obtain regarding foodways. Secondly, I added my observations during fieldwork and interviews supplement this data, which is then placed in the context of the food environment.

4.2 What HS reported eating

One strength of using food diaries to elicit questions about foodways was the enjoyment (reflected in the answers to the question of how they felt and thought about completing this diary) that participants reported when doing this, especially dieticians. Additionally, most participants said this instrument made them more aware of certain aspects or habits of their foodways they wanted to address or that would be helpful for their professional development

(O'Connell, 2011). To foreground this data, some differences between the study sites are highlighted next.

State of Puebla: availability of broad variety and affordable food perhaps because the University Hospital was also close to where students were trained.
Mexico City: for the case of the public University, there was cheap food inside and outside the setting and healthy food nearby or from students themselves as sellers, filling. Cafeteria food was highly demanded and the cheapest around the area for a midday meal *Comida*. For the case of the private university, a national public hospital was relatively close, hence more street food stands and some small grocery shops were available. Since this was not in the proximities of the school, this can explain why they relied on other students and other campuses to obtain food.

4.2.1 Nutrition students (Dieticians)

Nutrition was the only discipline in which it was possible to interview students from two different universities, one private (Mexico City) and one public (State of Puebla). This was also the discipline where most students shared pictures of foods they had consumed. Although they completed different instruments (recalls and food diaries) both food environments will be analysed in the following section. The information on HS's foodways allowed initial data gathering before the discussion started and helped to prompt some additional questions for the FGI and to build rapport at the beginning of interviews. In this case, the FGI was also the vehicle for collecting 24-hour recalls, which were completed individually. The discussion in the group then served to explore their views and beliefs about what they had documented and a good starting point to the interview was to ask participants what they thought about the recall exercise. The nutrition FGI was held in a private university in a western district of Mexico City, and participants for II were from Puebla's University as well as Mexico City's. FGI participants reported a 24h recall of a weekday in December, close to Christmas festivities, participants from Puebla wrote their diary during January. The researcher was not present on recall completion and the extraction of the data was explained in the past chapter.

Participants living in Mexico City had breakfast earlier than the ones in Puebla. For lunch (between breakfast and comida), midday meal (comida) and dinner, dieticians from Mexico City reported broader food choices, from fruit molten to beef, from vegetarian to sweet foods. Their midday meal (comida) consisted mostly of cereals such as tortillas, rice, pasta, corn-based stews and beef or chicken and in less quantity salads. Participants from Puebla had

less caloric meals and sometimes missed dinner or breakfast, which is consistent with research findings in Mexican nursing students (Barragan-Ledesma et al., 2015). Only on a few occasions did the dieticians in Puebla prepare food for themselves, whereas in Mexico City they normally prepared their own dinner. Almost all dieticians reported feelings or emotions when having one or various meals; interestingly both feelings of stress and comfort were the most commonly reported emotions, followed by feeling relaxed or satisfied. Regarding socialisation of food and other foodways' components, dieticians reported in their diaries that they normally ate in restaurants, followed by food that their mother or other family members prepared. Finally, when dieticians could choose, they preferred to eat at home, or out with their loved ones. Work and study activities led a quarter of them to eat at *cocinas económicas or fondas* for convenience.

4.2.2 Nursing students (Nurses)

Nurses in Puebla and Mexico City had a relatively consistent diet throughout the year. Nurses in Mexico City included dairy products for their breakfast whereas nurses in Puebla barely reported having, if anything, a cup of coffee and sweet bread or juice for breakfast. Only two FGI nurses had a midday meal (comida) around 5 pm, almost at dinner time. They both shared this meal alongside other friends and ate industrialised or fast food. A highly diverse dinner was reported by all nurses. Some ate *tacos*, sweetened bread or sweets, but also non-Mexican traditional (e.g. pizza, burgers) and Mexican food, although only one shared photographs of a couple of consumed foods.

4.2.3 Medical students (Medics)

Medics seemed to have regular meal times; their first meal was before 7 am, they all had lunch, very often snacks between meals, and dinner at their place of residence. When eating at home they did various activities: having conversations (housemates or family), doing coursework or watching TV. Some snacks, lunch or meals were consumed while walking, preparing work, or reading. The place in which they ate would normally offer foods and dishes ready or recently prepared, but in quite a few cases their mother cooked for them. Nobody reported cooking and only one female shared photographs of foods or her eating moments. Although during the interview some medics accepted that they sometimes prepared basic foods, they did not refer to this activity as "cooking" but instead as preparing food. Furthermore, these "preparations" were not carried out by them. These students tended to eat alone most of the times, almost half of them ate with either their medical peers or their family.

4.2.4 Dentists

Dentists' recall showed that most of their food choices were Mexican: e.g. mixiote, *Comida corrida*. They all ate with companions and consumed red meat for their midday meal *Comida* (3-4 pm). Although the only male participant reported being "against" carbohydrates, his 24h-recall evidenced at least one meal consisting mostly of carbohydrates. This same dentist said that the day before the interview, social meetings did not allow him to follow a diet in the way he would have liked.

The next table presents a summary of the findings on foodways obtained through food diaries, 24h recalls, and observation.

Table 4-1 General aspects of foodways per discipline

Highlights of nurses	Highlights of medics	Highlights of dentists	Highlights of dieticians
Lack of breakfast Sharing meals Diversity of food but mostly Mexican-traditional	Fairly repetitive pattern Studying while eating No cooking due to a taxing curriculum Frequent junk food Sugary + traditional foods	Mexican food With companions almost always Diverse foodways, no patterns	Feelings and emotions reported in their diaries (unlike other professions) Diversity of diet More than 3 meals per day

Data from interviews helped integrate HS foodways in a more comprehensive way, as participants explained more details of their diaries/recalls and talked also about their favourite or disliked foods and so on. This is presented in the next section.

4.2.5 Foodways components (preparation, preferences, companions, etc.)

Some HS decided to report their most and least favourite dishes, as well as their basic shopping list. Where present, this information was used to prompt interview questions to encourage a more detailed response. It is worth remembering here that more women agreed to being individually interviewed than men and on the other hand, men were more in FGI and only one woman was present. Perhaps men felt more confident when talking amongst others and women preferred to discuss such a sensitive topic (their food consumptions along with emotional and social aspects) without other people's presence. Taking this into account, some similarities and differences were found across disciplines and gender. Nurses were the most communicative about these aspects, both from FGI and II. Some highlights of these

descriptions are shown next. Dieticians and medics included in their basic lists: vegetables, dairy products, cereals (oats, amaranth) and very few animal-sourced proteins (egg, *requeson*). Two of them reported having Mexican traditional foods as favourites, two mentioned what they described as junk food (chips, crisps with hot sauce, pizza) and two mentioned some vegetables amongst their favourites.

Regarding medics, only two males and two women described plenty of their favourite foods and no aversions at all. For their favourites, both women reported sugary products (candies) and coffee and one male reported both Mexican and non-traditional food. This matches with the finding of medics often eating between classes to maintain energy and attention. Nurses reported mostly Mexican traditional (in some cases only used this word) for its favourites: *tacos, flautas, Oaxaca cheese, burritos, cajeta.* There seemed to exist a phobia of fat in female nurses' aversions, as well as some vegetables and seafood. In contrast, a few also reported that they did not enjoy some Mexican foods (quesadillas and tortas). It is important to say that, in this study, nurses showed stronger attitudes against the Mexican gastronomy. However, to the question of what food the nurses liked most, they individually agreed that both professional and student nurses mostly consumed Mexican food such as tortas, tacos, quesadillas, *gorditas,* and two added that nurses also consumed sweets, Coke and foreign foods (Chinese, North American) on a regular basis. For the same question medics included alcohol consumption and smoking as regular habits of students, especially for residents. Most reported that medical education was so demanding that through these habits, their health worsened generally.

Two dentists included meat and vegetables on their lists of most and least favourite, which suggested a lack of patterns across students from this discipline. Later in the interviews, it made sense since all three of them said they had not identified any patterns concerning foodways.

Some mentioned foods are shown next and other pictures are part of the glossary of Mexican food.

Picture 4-1 Flautas



Picture 4-2 Tostadas con requeson



This section described what HS reported in their 24h-recalls and food diaries. In the analysis of this data, it is acknowledged how I was constantly reflexive, aiming to be highly self-aware of innate professional judgements regarding dietary assessment, for example categorising dietary components as caloric, sweet, fresh. Using this method to obtain HS foodways could also be complemented with the observation that was conducted in the places where HS had access to food, and this is presented in the following section.

4.3 Observation and description of food environment

A rich understanding of the food environment in which the participants live is essential in contextualising the collected data. There is a peculiar gastronomic culture in the streets of Mexico City as well as in Puebla and the interview questions asked about local family customs regarding food, and also about the food available in the areas where HS studied. Additionally, more than half of the participants mentioned this significant gastronomic culture in their recall and diaries and therefore, to represent the voice of the participants, it is essential that the reader be familiar with this context. In this section, I foreground this food environment according to the observation periods conducted close to the universities and the places most frequently mentioned by participants. Although Mexican gastronomy is similar throughout the country, each region/state has its own variations of food, as well as unique local dishes. This section highlights the main differences and similarities between the study sites.

4.3.1.1 State of Puebla

Within this setting, various dieticians and all FGI nurses were interviewed. Food vendors prevailed outside the university; only one cafeteria was inside but teachers, administrative staff, and some HS reported that nobody purchased food from there. Some explained reasons: lack of variety, taste and high prices. Indeed, the cafeteria only offered sandwiches or tortas, some fresh fruit juices and packed biscuits and pastries (occasionally they had *empanadas)*. Outside the university, however, a broad variety of street vendors sold all types of foods: tamales, mixiote tacos, basket tacos (*tacos de canasta*), crepes, pasta, burgers, pizza, and industrialised biscuits and snacks. Most of them sold from a food truck, others were inside a shop (closed space), and many more on a street stand. Most foods were sold at affordable prices and foods were freshly prepared, warm and ideal for the then cold weather. I observed many people when buying from here as the university hospital was next to the HS'

faculty building. Indeed, during my visits I tried several foods, one of them was a torta de tamal (see Glossary), which I took to the nursing FGI in an effort to build rapport as an insider, despite participants knowing I came from a foreign university, as well as to dissipate hesitation to discuss aspects around Mexican food sold in the street for instance.

4.3.1.2 Mexico City - Public University

Inside this university, there was a substantial number of students registered as food vendors, since the University regulations only permitted students to sell food in order to financially support their studies. However, there was also a cafeteria that sold *tortas*, sandwiches, baguettes, *tamales*, industrialised products and drinks, sushi, fruit, salads. Interestingly, the (student) informal vendors sold similar foods and there were other selling industrialised products, mostly bakery, biscuit, sweets, and fizzy drinks products. This venue also served breakfast and midday meals daily (Monday to Friday) to all staff and students at a very low cost for Mexico City. This service[3] was subsidised and affordable to any student or worker. Long queues were observed more than one hour before the start of service, and the food was often finished within 40 minutes. When I tried this service, portions seemed very generous for the incredibly low price, food was warm and the lunchtime menu was tastier than breakfast - or perhaps I thought so given that I was allergic to more than two foods regularly offered for breakfast (cow's milk and boiled egg). Various food vendors were also just outside the university and some nurses and medics reported purchasing food from them; however, most of the HS suggested that time constraints (rather than budget) limited their purchases from these external vendors.

4.3.1.3 Mexico City - Private University

All FGI dieticians belonged to this setting and Nutrition was the only degree taught at this particular venue. Although the University taught other disciplines, teaching on other degrees was delivered in different buildings at least one kilometre away from other student buildings and faculties. At this site, there was a group of students who sold prepared sandwiches and *tortas* to other students because this site did not have a place where food was sold. Outside the university, only a small greengrocery shop was found, and just outside this, there was a tamales vendor, who only sold (sweet bread and atole additionally to tamales) in the mornings and evenings. Further ahead was a fruit juice and vegetable vendor, and a taco

[3] The cost of each course was less than 1% of Mexico´s daily minimum wage (MMW) (https://mextudia.com/universidades/uam/xochimilco/). A meal with 3 courses plus bread or tortillas and beans was around 10% of the daily MMW

stand. The place in which all FGI participants sometimes bought “healthy” sandwiches, was located 3-4 blocks away from the university (Appendix 5). This local, inside a house, was quite full of students and sold different types of sandwiches, combining vegetables and prepared all in the moment, like a *tortas* vendor. I tried a cheese sandwich with a vegetable salad, and a cereal and cocoa based drink and felt it had a peculiar taste, was affordable, filling and quite delicious. Most dieticians interviewed stressed that the lack of availability (at their homes or university) determined what they ate to an important extent.

These observations are part of the thick description intended for this qualitative study, where describing and specifying the context are intended to be a source of data that could be compared with what participants replied about foodways and some enablers and constraints to those. It is always relevant to contextualise time and space in order to understand all factors involved to answer the research questions (Nairn, 2012).

4.4 Summary

This chapter presented the evidence provide through food diaries, recalls and also through observation. The aim was to provide with a thick description so that the reader can situate in the study site and acknowledge various differences and similarities across and within health disciplines. This chapter is also relevant as the written information can be contrasted with spoken data, which adds rigour to the study but also, arguments to discuss what are the mechanisms that could be regulating these contrasts. The following chapter provides data from interviews that draws upon both foodways and DA aspects across HS.

Chapter 5 Mechanisms affecting Foodways and Dietary Advice provided by Healthcare Students

> *"But human deciding what to eat without professional guidance - something they have been doing with notable success since coming down out of the trees - is seriously unprofitable if you're a food company, a definite career loser if you're nutritionist, and just plain boring if you're a newspaper editor or reporter." (Pollan, 2008; 7)*

5.1 Introduction

This chapter explores the different thematic areas that encompassed at least more than one of the themes that emerged from the analysis of the different types of interviews. These areas are presented as headings and explain the enabling or constraint mechanisms for foodways, as well as influences on choosing, buying, preparing, and eating food. These factors are mostly related to HS's economic, social, and cultural environment and circumstances. After breaking down the themes, these were incorporated into thematic areas by searching interrelated or/and overlapping aspects. For instance, all themes related with the location of food, the person, or the geography of eating were included in the section "In my place" (see section 5.4), and each aspect was explained, and quotes were provided. The rationale for the headings as well as a graphic representation are presented next.

5.2 Thematic areas encompassing various themes

The analysis phase and consequent construction of these themes triggered further reflections and some thoughts were developed along with the supervisory team to build a platform that could bring my theoretical framework together with these themes. Consequently, some dominant themes which contained subthemes kept emerging when broken down into parts, and precisely because the aim was finding potential causal mechanisms as explanations for HS's views. In that way, the main concepts or categories became more visible, underpinned by a critical realist framework. Since reality is complex and systemic, CR is a meta-framework (Gerrits & Verweij, 2013) that foregrounds this research. Meta-themes (thematic areas) are provided and build upon main categories (presented in the discussion) emerging from the data and explain the foremost underlying mechanisms that are at work within these

findings. Drawing on thick description, the following section will expand on the influences that exist for HS's foodways and their influence on DA.

The process of overlapping and naming subthemes for each emergent element, and the creation of categories, is illustrated next. In the case of foodways, these are strongly influenced by social circumstances, and this might also have an impact on the different ways in which HS and patients adhere (or not) to DA. Structural factors are considered enablers or constraints for people (HS and patients) to have foodways they would prefer, which shapes any offered DA. For the purposes of this research, structural factors include constraints such as costs, time (which will also rely on employment) and sociodemographic conditions such as education (healthcare system). Environmental structural factors are region/country, location, availability of foods, and even food knowledge, which is strongly influenced by social and cultural circumstances. Hence these mechanisms are presented within two sections in this chapter.

In the first section, as the title suggests ("*Under Pressure*"), some social and cultural constraints are explained to understand how HS have pressures from different sources, their companions, their families (along with their customs), and also an obesogenic environment, as well as several **social representations** and expectations from them to stand out by having healthy/unhealthy foodways. Following from a concept elaborated by Materan (2008), and based on the writings of Jodelet (1984) and Moscovici (1961), social representation were taken as an interpretation associated with language and social practices established by a cultural group. This representation also serves to address the gaps in relation to the understanding and the interaction reality in the material and social world. One of its important functions is promoting collective thinking and justifying behaviours across social interactions. Later in this chapter, some notes of HS's limitations to healthy foodways are presented. At the end of this section, some structural factors such as time and economy are mentioned as relevant influences for HS's foodways.

The second section of the chapter ("*In my Place*") includes three important environmental structural factors that influence foodways and how DA is provided. A myriad of views with regards to being local/foráneo(a) and its links with foodways are presented. Food availability and being far or close to home (along with its foodways customs) can represent an advantage or disadvantage.

The section ***Gender*** describes an account of various ways in which foodways and aspects of dietary advice seemed gendered given the responses of participants and how some ideas

seem to prevail in women - and others in men. Gender seemed to permeate various aspects of both foodways and dietary advice despite no direct feminist statements having been made in diaries or directly in any interviews. Nonetheless, the most representative quote to illustrate this and further data is included as a thematic area. Moving on, the section *Mixed Emotions* describes aspects of what HS reported regarding mental and emotional health, how this impact their foodways, and how HS address their own health issues. Some of HS' struggles, mostly attributable to their status as a student, had a relationship with their way of eating and food preferences. This emotional eating, however, was embedded in the way they advise (but first learn) on diet and nutrition.

The section *Giving Education, Taking Information* interrelates the practices HS develop in terms of DA and the barriers that patients face to follow this advice. Even so, HS gave an important account of what needed to change and be planned regarding their professional training on nutrition and diet. Finally, the section *Only We Know* explains the ways in which HS manifested their knowledge, primarily through dominant attitudes (including power imbalances) when offering DA. They showed several attitudes that deflected and rejected some of the patients' lay knowledge, often by correcting social representations and trying to belittle patients' cultural foodways' beliefs as their main strategy to advise on diet.

In the case of Chapter Six, which shows the interaction between HS' foodways and their offered DA, various discourses on cynicism, incongruence and patients' recrimination (Section 6.2) were expressed along with some wishes of becoming role models and be more credible to patients (Section 6.3). Finally, in this same chapter, the account for attitudes that HS believe as relevant to credibly counsel on diet (Section 6.4) are discussed. All sections in every chapter had a relationship with one or two categories. The following table shows how each dominant or global theme encompasses one or various organising themes. For instance, the firs thematic area is called "Under Pressure" and it includes themes that describe underlying mechanisms that were somehow manifested as some sort of pressure according to participants views. In this case financially, culturally, environmentally etc.

Table 5-1 Thematic networks. Initial mapping of all themes

Global theme – Thematic area	Organising theme
Under pressure	▪ Cultural perspectives ▪ Obesogenic environment ▪ HS habits and customs ▪ Health and educational background ▪ Time constraints ▪ Financial aspects

	▪ Employment
In my place	▪ Local /foráneo(a) ▪ Availability ▪ Dealing with patients' traditions, customs, and beliefs
Gender	▪ Morality embedded with foodways
Mixed emotions	▪ Emotional eating ▪ Dealing with mental health issues, internal states and emotions ▪ "Good" to eat
Giving education, taking information	▪ Lay knowledge ▪ Professional knowledge o Better planning for professional training o Offer more professional knowledge o Healthcare education needs to be reshaped to address communication issues
Only we know	▪ Patronizing attitudes when advising on diet ▪ Power issues amongst HS/HP
Do as I say not as I do	Congruence and credibility issues
Making an impression	▪ Unbelievable
Building for credibility	▪ Theory vs Practice

5.3 Under Pressure

HS's social environment puts pressure on them to stand out or belong to social circles through food, or by making certain food choices. Individually, mostly female medics mentioned several ways in which social pressure allows them to be "healthier/unhealthier". However, a representative extract came from a male:

> Armando (medic): I feel that they (medics) don't care… I don't know maybe it is a way of appearing like stand out, I don't know how to say it, is like 'let's see who holds the most'. It happens quite frequently that they try to compete or belong to a certain group then they will have bad habits due to that. A lot of times they go out 'let's go for a burger' and everyone goes and from there they drink and there I don't know what they consume, it seems they have quite bad habits, they do not eat well. I don't know if I am being clear… they don't have good habits, it is like they try to fit, to go out, to discover… I feel they don't give a damn. I have colleagues that are obese and either way they don't want to lose weight

Nonetheless, it seems that for women it was more important to belong to their circle of friends and relatives, and this was making them eat unhealthily. Sometimes they received more pressures from peers:

> Lisa (medic): The social aspect has a lot of pressure, with friends and with 'not quite' friends. I believe the 'not quite friends' put even more pressure (to eat unhealthily) …

Lisa had seen how her health was markedly affected by her diet. She described feeling the need to set an example for her medical peers (a future medic who is taking care of herself). Other medics modelled their choices after their friends', with only one reporting not feeling influenced by them (he, therefore, chose salads and healthy foods). This pressure from friends or peers was also manifested by the other two medics and to a lesser extent in three dieticians. Lastly, only one medic reported a healthier influence from one of her friends, who advised her to lower her consumption of sugary products.

Within the medical FGI, participants reported high alcohol consumption amongst medics that break up with their partners but suggested that they had high consumption when in relationships as well. A dietician added that alcohol consumption was normally associated with weekends. Medics also blamed celebrations such as birthdays for eating unhealthily, and most medics in the FGI, as well as nurses and dieticians from the II, mentioned a negative influence from their family on their attempts to eat healthy. Apparently, this influence prevented them from being healthier or at least, less unhealthy. For instance, a dietician found it challenging to cut meat out of her diet because of paternal pressure. One medic reported that family could be a double-edged sword, which is also related to pressures from his social environment:

> David (medic): I think the presence of family, the fact that your family isn't here (in the same city) is like an opportunity so you can be responsible for your decisions, meaning eating healthily or healthier than your family. But you also could say 'well there is no time, there is no one that prepares food then what is easier to get'. I believe being foráneo, being an outsider and live in the city. I think that is the main problem, the family, along with the economics.

A medic mentioned not having her family close as advantageous:

> Nayla (medic): […] Then you just work out more freely how you manage your food throughout the day and the week.

Interestingly most participants who expressed these views were foráneos. For one nurse, however, his mother's influence made him decrease his sugar consumption. In addition, one dentist and a dietician mentioned having strong support from their families to be healthy, especially from their mother. Sometimes HS tried to positively influence their families. A nurse tried to exercise with them, a dietician {Sabina} was influencing what was cooked at

her home since their grandparents "have all the diseases in the world" and another dietician tried to introduce new foods to her parents' dietary repertoire. One foránea dietician reported not to feel pressure herself although she had seen some cases amongst her peers:

> Salma (dietician): Well not so much (conflicted) because I don't limit myself. Thanks to certain knowledge of university (sic) I haven't limited myself on any food, I mean I don't feel that this causes me a disorder like it has been obvious at least within nutrition disciplines. I've seen that a lot of my peers are apparently healthy at the beginning, but they detonated an eating disorder. I always, always had three or four peers that detonated that (sic) and I believe that connect the knowledge to something healthier or something more physiological (sic) caused me to know how to choose in which time, to know when to do or don't and I didn't limit myself. To say, to go out we agree that beer is not good because it has alcohol, in its metabolism the thiamine is interfering… I think I've managed to compensate those losses with foods. I've done, actually, some tests because my family is pre-diabetic then I would be pre-diabetic, then that has helped me to have even a healthier life. It doesn't happen to me like my peers say, 'hey you don't eat this anymore or don't do this anymore', I think I've done this alright in that sense.

Two males from different degrees said that having the knowledge and experience about the right alimentación helps them to mitigate the effect of social pressure with regards to food. One stated:

> Brandon (dentist): Suddenly a friend finds you and they want to go out and eat something. Well, I eat (with them) without guilt or shame; but when I am alone, I try to measure my portions and I try to be aware of my global consumption of the day

Using certain "light foods" as compensation when feeling guilty seemed a mechanism in response to the shame some HS expressed through their narratives. In this case, Brandon expresses certain cynicism and denies guilt when eating with friends that supposedly do not eat healthy. Despite a few exceptions, social influences, especially from family, prevails on HS, in most cases for eating unhealthier. "Values are a group-level phenomenon requiring shared agreement" (Hitlin & Piliavin, 2004;361), a feature of social life and forms of articulating needs. Although these are measured individually, values can reflect a cultural ideal. If individuals act under norms there can be pressure, whereas values do not make people feel pushed (Hitlin & Piliavin, 2004). To illustrate it in this research context, the need for food can be considered through the value of a tradition, which in this case is eating more when being with family. The following section explains how companions influence HS's foodways and/or their attitudes towards food.

As reported in the food diaries, some medics did not have companions whilst eating, therefore they decided to watch TV, videos, or to read (often related to their medical training). For the rest of the cases, companions (in several cases friends) served as an excuse for an unhealthy alimentación because medics reported that they tried to eat healthy food when being alone. Three nurses reported positive companions' influence regarding food choices (and preparation in one case), but also as an enjoyable environment during meals. Another commented the opposite; since given her scrupulous way (taking all fatty skins to chicken for instance) of consuming food (especially when eating out), companions were uncomfortable for her.

Dieticians were more inclined to having an influence on their companions. For one, the lack of companions represented a stronger unhealthy influence. For three dieticians, as well as for two nurses, the healthiness of their food choices did not matter when they enjoyed a moment, especially when they were with their loved ones. There were two dieticians that had greater influence from their partners, nonetheless, they had both tried new foods that they ended up enjoying but also still exceeded the consumption of unhealthy foods. Dieticians reported unsuccessful attempts to represent a healthy influence on their families. All of these students mentioned how patients seem to be quite adversely influenced by their companions. This seems a projection of their own behaviours and responses to companions. Choosing similar foods to their peers of loved ones seemed to be a path to belong to HS's organisation or their community (Alvesson & Willmott, 2002) which suggests a strong community influence. To gain a better understanding of some of their customs, the next section highlights an important aspect mentioned by HS that shapes greatly their foodways, which is the Mexican food culture.

5.3.1 Cultural perspectives

The Mexican gastronomic culture was strongly present throughout the data. For breakfast, a *torta de tamal* was quite common because it was highly available and cheap, according to a nurse. Mexican *antojitos* are found easily, especially in the evening, according to some participants. Most nurses expressed their views about this in the FGI. They mentioned that due to a general attachment to its culture (that according to some HS is unhealthy), patients find it difficult to change their eating habits:

> Gonzalo (nurse): […] no, they don't have that vision or that culture, then the same happens with alimentación, a good culture doesn't exist, people are used to eat what there is, their tortillas, their little beans […]. Then if you come and try to change their diet to a person, no.

The influence that some social representations had for some medics seemed stronger than other social aspects. Only male medics said that in the mornings and evenings, Mexico's streets are full of *taquerias* as well as stands that sell *atole*, sweet bread, and *tortas*. In sum, street food vendors do not sell healthy food according to HS. Another social representation that is not widespread, though interesting, was expressed by another medic, who mentioned that he became obese when he was a child due to his mother's belief that rich people were fat therefore her family had to look fat to display their affluence to others. Medics stated that being healthier meant only decreasing amounts of food and eating more frequently during the day. For dieticians, a full and complete meal meant bulky food and not only *chacharas or chatarra*. "Eating well" for them did not necessarily mean salads but rather a more balanced alimentación. For patients though, HS' perceptions were that dieting meant a restrictive plan, or 'starving' themselves. *Diet*, in a strict sense, refers to the relation between food and health (Cohn, 2016). This however proved to be problematic especially because it is commonly misused to refer only to products consumed with a therapeutic aim or to reduce caloric intake. In order to remain faithful to participants' use of words, *dieting* in this research means being subject to a regime often low in calories and other nutrients to reduce weight. Salma (dietician) stated:

> "[…] diets to lose weight to be healthy are expensive, diets or meal plans are cold, squared, have no variety and a lot of foods are restricted, 'well I cannot eat what I like then what can I eat?'"

Most HS blamed a few factors and people for their inability for eating healthy food. Some noted that "Mexicans do not have a good alimentación" and are always rushing hence buy the first food they see (normally unhealthy). Not only did dieticians learn about what to include but also what to exclude, for instance, food from the street that is either fatty, sugary, or/and unhygienic, therefore it should not be consumed. A dentist had strong views about Mexican culture with regards to addressing health issues. He, as well as some nurses, said that the Mexican government had encouraged the demonisation of fats and that is why sugar and carbohydrate consumption had increased. This, however, might have a historical base. Given the high rates of undernutrition at the beginning of the 1980s in Mexico, a high consumption of meat, eggs, and milk was encouraged, whereas now, more fruits and vegetables are recommended but as complement for the first-mentioned products (Bertran, 2010).

With regards to a health and nutrition culture, this dentist strongly believed that rather than facing and treating health issues, people choose to ignore them. Only one dietician

expressed the idea that some foods were demonised and foods high in carbohydrates (unhealthier) were encouraged. One medic blamed the globalisation for having a higher availability of buying *chucherias* at a cheap price:

> Lisa (medic): I mean that your *guajolocombo, torta de tamal* with your cup of *atole* is cheaper than cooking yourself.

Another medic said that, given the high obesity rates, it was now more relevant to be conscious about our overall alimentación. Another agreed by saying that the worst health problems in Mexico were caused by the wrong alimentación, which was preventable.

For this section, social media and digital communication are included since culture also includes what people receive from different sources such as new modes of communication, which also shape cultural beliefs as well as human behaviour (Sawyer & Chen, 2012). Nonetheless, only one dietician and a medic commented on this, saying how mass media consistently promotes industrialised foods, and "miracle" products to lose weight, hence the food industry was 'damaging' overall population health. Conversely, a couple of dieticians said social media could help increase their options by providing access to recipes or recommendations from the "so-called" nutrition experts, and hence they could use this for advising patients. Since social media is closely related to the social environment, it is important to explore HS's views about an environment that seems to encourage obesity and unhealthy food choices.

5.3.2 Obesogenic environment

An obesogenic environment plays a singular role in this research since it was mentioned quite often as a limitation to adhere to DA. That is not to say it affected accessing healthy foodways, as fat and sugar were constantly perceived as unhealthy by HS. Only foráneos, male nurses, and one local woman discussed this topic. This was also related to their views regarding Mexican culture. Perhaps men are more worried about this environment for the consumption of fatty and sugary foods, whereas women were more focused on how all these aspects, and others, affect them individually and change how other people perceive them (considering their looks only, for instance). One of them mentioned that Mexico, especially outside clinical settings, had a full range of food stands, given contemporary busy lives. *Tortas* and *tacos* (especially tacos) were described as addictive and the participants stressed how Mexicans will always like these. Interestingly, two nurses that were also working part-time had the strongest claims regarding this topic. One student who worked in a health-related position (with regular night shifts), said that the only available food at night was sold

in a franchise shop but there were also food vendors with tacos, *cemitas*, *tortas*, *birria*; "everything on the street has fat" {Gonzalo-nurse}. As a result, he then perceived that he had failed in his attempts at being healthy. Strikingly, almost at the end of the interview, he mentioned he would "clog" himself with tacos before he went to study abroad for six months. Surprisingly, another nurse that ate tacos in the street also said that these food vendors should be banned from a university environment, especially the ones that sell churros, fizzy drinks, *tacos de canasta*, chips, crisps and so on, since "is not nutritious" {Roberto-nurse}. FGI nurses, as well as some dieticians, reported that it is a common practice to bring *tortas*, sandwiches and so on to the university, however, this was normally prepared by their own nuclear families.

The only dietician who mentioned an obesogenic environment said that there were some professional dieticians or nutritionists that use massages, injections, or pills to encourage weight loss quickly in their clients and promote an idea of low effort. It is noticeable that this was the only dietician who mentioned this obesogenic environment, which potentially could be due to a general assumption amongst dieticians that this type of environment existed but was not specifically mentioned using this term. It could also be the opposite case, that they do not recognise this environment as part of the Mexican culture. It is interesting to look at the different perceptions that exist across degrees, about the obesogenic environment.

Only one dentist had strong opinions about this, and he spent most of the interview explaining. He stressed how Mexico was an endemic obesity environment because outside clinical settings there was a high availability of foods such as *fritangas* and *frituras*. At his university, food vendors or unhealthy items (cigarettes, sweets, and fizzy drinks) were "supposedly" regulated by authorities (although he did not saw fulfilled this regulatory role). Dentists' activities also led them to buy highly caloric food and with poor nutrient content. He also mentioned that all social gatherings with his friends meant to eat "today's most deadly poison: carbohydrates" {Brandon-dentist}. He said that Mexico's food industry is encouraging an obesogenic environment, especially within supermarkets that surround their clients with sugary foods, such as fizzy drinks, cola drinks, sweet bread, and *frituras.* In Brandon's words:

> Brandon (dentist) "You see that yogurts have a low-fat percentage, but high sugar percentage and they sell you the idea that is healthy but is rather not. I mean they sell you something low in fat but extremely sugary […] it is a real obesogenic environment. *Wal-Mart, Soriana*[4]*,* there is not an appropriate labelling that tells you this element (ingredient) is risky."

[4] Supermarket brands in Mexico

He pointed out this environment as the cause of most chronic diseases in Mexico. Nonetheless, he also described as highly unhealthy what he normally eats during holidays back home:

> Brandon (dentist): Oh well yes quite bad hahaha, yes, I do eat quite bad there (hometown), I take it out over there for all the times I eat right but I quickly get back to normal because those are only three days and I am conscious that eating wrong three days will not make you diabetic or overweight. The habit and routine are the ones that kill you. I know that three days of eating wrong won't make you better or worst then I eat quite bad in certain long period I try to compensate in the following days and with certain techniques I have from nutrition, prolonged fasting, low in carbohydrates, then I quickly stabilise back to my weight and then, because I work out physically, it's easier for me go back to my ideal weight.

Considering that these environments are influencing HS food choices to some extent, it is then important to mention what they considered to be their habits and customs.

5.3.3 HS habits and customs

As an important component of HS´s socio-cultural environment, their customs and habits with regards to foodways emerged. For this section is relevant to acknowledge that habit[5] is an individual learned behaviour which is derived from an attitude, and custom is a practice that is well-established and group accepted that is taken for granted (Tonnies & Loomies, 1999) and that are normally transmitted generation after generation. Custom, therefore, can be rooted in shared habits. The next table presents what participants (divided by subject) mentioned as customs and habits, and a succinct analysis is presented afterwards.

Table 5-2 Summarised HS habits and customs

Habits	**In relation to...**	**Type of students**
Eating substantially in the morning	Quantity related habit	Nursing
Big amounts for snacks, spicy sauces, or especially over the weekend, Buy many foods whilst eating with medical peers/friends		Medical
Eat mostly spicy food (breakfast, snacking, and midday meal). Sweets just after midday meal		Nutrition
Effort to improve family diet in relation to food quality or utilisation	Quality related habit	
Customs		

[5] Set of conducts practised by someone starting from action repetition with regards to the selection, preparation and consumption of foods. These are related with social, economic or cultural characteristics (Alvarez-Rivero et al., 2017).

Familiar taste such as mother's cooking, home-made food instead of cooking	Taste-wise	All
Drinking coffee mornings and nights	Family custom	Nursing
Eating cakes and other desserts, as well as uncommon (e.g. pizza) and Mexican traditional with family. Slight changes to traditional recipes.		Nutrition

Mostly dieticians acknowledged how important their family customs were for determining, at least partially, their foodways, which makes sense due to their close relationship with their companions and families.

> Zianya (dietician): …It really becomes like a custom to eat a certain type of food, a lot of times, like traditions, like all the dishes you know. For instance, tomorrow when I have children I will cook more or less like my mom. And practices, things that you repeat or that you see frequently in that family circle, I also saw that because I started spending more time at my boyfriend's house. And there are a lot of differences between his house and mine […] a lot of things can be similar given the same country and city but still, there are some others that change a lot. And we have been together for 3 years […] even when you visit a friend you realise, then I think all of these are included in the foodways, I mean how frequent is something in each place… the customs.

With regards to nutrition composition, the carbohydrate-based foods seemed to be an important part of customs/traditions and it has been shown previously for medical students (Rivera-Barragan, 2006): *chilaquiles*, popcorn, cakes and desserts, tortillas, coffee, soda, *tacos*; as well as fatty and low protein foods such as *chicharrones* and cheese. There is generally a desire for people to maintain their traditional source of sustenance (Pilcher, 2005). The following case, however, was different:

> Armando (medic): Yes, I've always been fat […] and I arrived home and (there is only) fat. I remember my mother once gave us fried potatoes and potato cakes, I mean that was the meal of the day, only fried food. But my mom also has cardiovascular risk then they [doctors] took away fats. Then we got to a point where everything was difficult and I don't eat anything fatty or with sugar, in that sense because my family has a risk of a cardiovascular event. My mother is already ill, then if I have the precedent well why do I trigger it?

Most of HS's traditions/customs were related to the flavour of a food or meal, either related to the kind of spices or flavouring they use, the quality of food, a familiar taste (home-made meals), recipes changes or trying to make food or traditional dishes healthier. The second factor mentioned the most was the amount of food or the content to make it a full meal, which would need to include several foods depending on participants' traditions. Dieticians in the private university were approaching to their longest holiday of the academic year

(Christmas) and to the beginning of the "posadas[6]". Some mentioned having already started with "Guadalupe Reyes marathon"[7], which was relevant for their foodways of that specific period.

This data seemed to have a minimal concordance with the information they reported in their food diaries. Some foods normally considered as cravings (cake, sweets) as well as the amount of food they reported to eat especially over the weekend, were often not mentioned in their food diaries and 24h recalls. In the next chapter, I discuss the various emotional struggles that were evidenced when discussing participants' food diaries, since they were more open about it. It is important though to foreground the environment in which they are trained and that somehow has an impact on what they decided to eat.

5.3.4 Health education and background

Another aspect closely related to the Mexican context was its Healthcare system, in which HS practiced and learned how to become health professionals (HP). Other aspects of professional knowledge are presented in the next chapter. However, before describing the findings, it is important to note that I had access to evidence about an extra-curricular health programme at one of the Public universities. Their aim was to promote wellbeing, knowing that they are vulnerable. This programme began in 2014 and was repeated twice a year when new students arrived to start their undergraduate degrees. The programme, called "Healthy University" was based on a Model put together taking the WHO and the PAHO (Pan-American Health Organisation) but for application in Latin-America (RIUPS, 2013). The university collected health assessments from students (irrespective of the degree they studied) such as physical, dental and medical examinations in the week prior to starting classes. They also administered a survey on health-related behaviors. In the survey they enquired about nutrition and risk behaviors; their results suggested students had low consumption of fruits and vegetables, had no fixed times to eat and ate high-density foods. They found 25% of students were overweight in and more than 10% were obese. With regards to compensatory behaviors (such as restrictive behavior), almost 15% had these, and more than one third said that their emotional state influenced their way of eating. Moreover, more than 90% were not sufficiently physically active although they were all had the ability to do so according to the physical exam.

[6] Traditional and religious festival celebrated in Mexico (16-24 December) in which hosts offer refreshments, hot fruit punch, tamales or a specific stew. Children brake piñatas filled with candies, peanuts and fruits (https://www.collinsdictionary.com/dictionary/english/posada)

[7] A common saying in Mexico that happens between the 12th of December (Guadalupe's virgin day and the 6th of January – Day of The Epiphany (Three kings-Reyes Magos) and all festivities come together which for a lot of people means they will eat more and festive related foods.

HS also had views about how the healthcare system could influence DA, by also shaping their own, or patients', foodways. Some nurses believed that the procedures they practised were not applied as they should be in Mexico; additional to the pressures they received to respond to various HP. A medic blamed the predominantly curative focus of medicine in Mexico, in health conditions that could have been treated in their first contact clinic, especially because preventive medicine also includes nutrition and dietary guidelines[8].

> Armando (medic): That they (educational planners) included more nutrition programmes because I had Nutrition (the subject) here but I didn't have to, it was like an extra. If we review the curricula, they never get into kindergarten nutrition. Over this term, we are supposed to see (sic) nutrition but we see it quite quickly, there are only two topics, no, and, in fact, it was only one class. The others are from metabolic syndrome and are focused more on pathological rather than normal.

It seems that the way of addressing nutrition problems at the clinical level has been reproduced from training stages. This added to a lack of support for eating healthily seemed to resonate on various HS. This issue was also affecting HS' foodways, as some nurses believed that the educational and healthcare systems promoted long periods of classes and almost no break, which made them fast for a prolonged time given their workload and working/studying schedules. Some aspects mentioned previously, such as time and money, which often made HS look for a job, were treated as structural factors and are analysed next.

5.3.5 Time constraints

Considering time as a period of days, only a few medics and nurses mentioned this as a constraint with regards to having foodways they would prefer. The complicated periods for eating healthily were holidays (or celebrations) in their hometown (applicable for foráneo(a)s). However, for the local participants, this represented an enabler for preparing food with more time and thus the possibility to select healthy foods. Regarding time as an interval (hours, time of the day) for preparing, consuming and purchasing foods, mainly dieticians and nurses mentioned various constraints. Although they also mentioned alternatives for patients that have time constraints, these recommendations seemed to be projections of HS personal lives since they mentioned how they would address time

[8] These guidelines are provided through guidance (Orientacion alimentaria for its Spanish most direct translation), which is a set of actions that provide basic guidance, evidence based and systematic. Tends to develop abilities, attitudes and practices related with alimentación to promote the adoption of a correct diet individually or collectively, taking into account physical, economic, cultural, social and geographical conditions. The term orientacion alimentaria is often confused with nutrition education, which includes a behavioural change but that also needs to act over alimentación rather than nutrition, which is an involuntary process.

constraints. A few medics mentioned that time for buying, preparing and eating was often insufficient given their academic workload, including the practices. It also depended on their supervisors, but they also mentioned time for transporting or studying, was a limitation. Only one dietician planned her academic workload according to her times to eat, which was contrary to the rest of the participants who normally adapted their foodways to their academic obligations. With regards to nurses, only foráneos -mostly males - discussed this. Perhaps since they considered themselves as providers of food/money, they might be more aware of other "structural" constraints such as time. Here is an example:

> Gonzalo (nurse): and also, what fills you, for instance, from 6 in the morning this hall has *tamales* and *atole*, there are like 3 to 4 people that sell this type of foods. Later the *mixiote* vendors arrive and the other business start opening but everything is *fritangas*, all fried or tacos. There is a man that sets at the medicine hall that sells pizza slices and they sell it because it's a big slice, it is not expensive and its more or less considerable (size), burgers, hot dogs, stews tacos also. Then you cover during the week the whole hall, but you know what? One, you have no time, you need food quickly, you can't wait until they prepare you a steak or a salad, or that you sit down and calmly eat. Regularly you have class then what do you do? You go out and buy tacos that you can eat in approximately 10-15 minutes or less. Then it should be quick and filling, in the mornings there is the *atole, tamal*, with that you have a super breakfast.

As it seems evident that with a broad variety of food available, very often HS faced constraints, other than availability such as the finances to buy what they would like to eat or affordable places near their university or their accommodation. This is explored in the following section.

5.3.6 Financial aspects

This was mentioned very often in relation to foodways HS preferred, and indeed HS showed a higher awareness in this matter for DA. Some HS mentioned structural mechanisms such as a city's economy and their job source as determinants for the way in which they (and their patients) obtained and consumed food.

Various medics mentioned that the cheapest foods were not necessarily the healthiest, because prepared vegetables (i.e. salads) are sold far more expensive than in the market, but none of these foods seemed filling for them.

> Uziel (medic): I feel that it changes a lot (living in the city), for example, a lot of times products are the same but are more expensive, and then as we were saying, the economic factor is a limitation. Then if you come to think about it, a person that is local to a foráneo, a local has the accessibility to more things or his family gives them food, well he has access to more stuff. In contrast, someone that is

> foráneo, well you eat whatever, whatever falls no? Then I think that it affects a lot. Now, for example, I am trying to diet at this moment, and you realise that a lot of products are very, very expensive. This means if you want to diet and you go and buy fruits, there are fruits that worth 40 pesos and I don't know, there are… like four stuff and then you analyse, I rather eat something else that will be filling to buy fruits that are more expensive at that moment. Then it is like factors change, factors that can intervene in this.

A low consumption of fruits and vegetables or a limitation to a healthy diet (Frank, 2007) has been evidenced before in medical and nursing students (Blake, 2013; Spencer, 2006). A medic mentioned that they have realised how they spend cumulatively on junk food; the same amount of money that they would have spent in buying a full midday meal (*Comida corrida*). But medics in the FGI believed that choosing healthy foods was expensive, especially for foráneos that have that had to manage their own budget. Some believed that eating in restaurants was expensive and eating from street vendors was affordable, it was unclear though, which was the tastiest food for them. Amongst peers and friends, they supported to save money when eating. Some tried to find new (and cheaper) places, although it was unclear whether these were *Fondas*, restaurants, street vendors, which served filling food at an affordable price for them. In Mexico, tortillas, beans, and fresh fruits prices have increased over the last 15 years (Moreno-Altamirano et al., 2018), yet this should be taken cautiously since the minimum wage has also increased. Mexican evidence has shown previously that non-dietician-HS consume food from street stands quite often as well as takeaway meals (Ponce et al., 2011).

When considering financial issues for DA, everybody had views about how financial constraints were somehow relevant. This view is contrasting with findings from Guatemalan patients (Yates-Doerr, 2013) that showed how doctors' advice to eat bread was recognised by patients as expensive. In this study, a couple of dieticians claimed that recommendations varied amongst private and public schools, some others said guidelines were unfeasible to follow when on a restricted budget. Nurses stressed how the same food could be obtained at a cheaper price, for instance comparing buying fruit from a grocery shop (or prepared in certain way) and from the street market.

> Roberto (nurse): I have always thought that I would make a change by having enough money. If I had money I would improve the way of my alimentación because I've seen people that have money and live in a residential area such as Polanco, Satelite or Santa Fe[9] that always bring their breakfast, their salads, a piece of cheese but I don't know from where. Obviously, a good quality one but I don't know what it is. They never have a fizzy drink they always have their water bottle or coffee flask and such.

[9] Generally considered upscale neighbourhoods. They have quite expensive accommodation and services in Mexico City.

> Then I believe if we had more money, people that eat like that, we will improve. Well, at least talking about the city because in the village this is different. But here this I what I do. When I have more money, I try to go to the supermarket and purchase a lot of things and that all week I would have something to eat, but not just anything such as biscuits or ice-creams.

For some participants, it was clear the importance that money had on their lives, and for their foodways. This last quote originates from a participant that had part-time employment; an aspect that is briefly mentioned next.

5.3.7 Employment

For HS with financial constraints, employment seemed to be a potential solution. This was not to say that some other aspects, such as foodways, were changed. For the ones that had a job, their student and employee status reduced their time to prepare food in the first place, but also to buy and enjoy it with other companions. Overall, the HS that worked found it difficult to choose what they would prefer at the moment they wanted to. A dietician expressed having anxiety at her workplace and she showed through several passages the significant influence that her present job had on her foodways:

> Gladys (dietician): […] I got traumatised of that one time […] when I saw it was 1 am in the morning and I bought peanuts but I was literally about to pass out, if it wouldn't be for that I would have (passed out). Then I don't want to feel like this again then best to eat well and try to take food to work."

They, therefore, needed energizing foods such as Coke, coffee, biscuits, chocolate, and *tortas* (which some also considered unhealthy):

> Gonzalo (nurse): if a service comes you are almost sleepy, you drink coke and with that you wake up and you attend your service well, because all night they keep coming (services) but then I see it and you have all the opportunity to eat well but also at midnight, what do you find? […] what you find the most is Mexican food: *taquitos, tortas, pozole, tostadas*. In my view, all of these should be eaten for breakfast, because they are the heaviest and the most caloric […] people have dinner and they go to bed.

For some medics, as well as for Gonzalo, all they could find during their night shifts was the "meal-deal" offered by the hospital (high in carbohydrates) or Mexican food on a regular food stand in the street. Food in the street has a long history amongst Latin-American cultures and according to recent studies almost all people eat at least one day per week out of

their homes and that food stands contribute to a third of caloric intake of Latin-Americans (World Bank, 2017). Regardless of how HS sometimes use this food offer, they seemed to discourage it for patients.

In this past section, various constraints and enablers related to cultural and social aspects of food were described, and all these are ways in which firstly, students struggled to have the foodways they would like to and secondly, HS coped with some aspects and constraints. The following section describes mechanisms that influenced HS foodways and were related to locations and places.

5.4 In my place

This section explains all reported enablers and constraints that were linked to HS's place of origin, the place for accommodation and clinic setting.

5.4.1 Local /foráneo(a)

An important subtheme was how this social circumstance had an important impact on HS´s foodways and attitudes to eat, especially when most participants in the data set were foráneos and described several constraints as well as advantages of this status. Furthermore, all medics self-defined themselves as foráneos. Some nutrition and medics mentioned that when they ate with their families (both nuclear and extensive), more home-made food was available, which the majority enjoyed.

Table 5-3 Pros and cons of being foráneo(a)

Advantages	Disadvantages
Freedom of choices	They preferred home-made food or Mexican traditional foods
No fixed times to eat	Financial struggles (quantity and or quality of food changes)
Higher variety as to food options Higher food "healthiness"	Lose control of what they eat (no more "on diet"). Nobody prepares their food.
Avoid family customs (traditional food)	Discomfort of having irregular mealtimes and only basic preparations

Apparently, to live with family represents a tension because HS could not choose what they liked, but at the same time, they did not have to spend time on preparations, because their family did it for them. Being foráneo (a) represents a constraint for availability as well. Indeed, a dietician had limited availability of foods and as a result needed to purchase from a vending machine close to university sometimes. Although a wide variety of products, foods, markets, and shops was described, choices seemed to be influenced more by financial and time constraints.

Two foráneas dieticians had the experience of living in and out of Mexico City. In some way, they commented that they were trying to transmit all these experiences to patients. It appeared to be an issue to take responsibility for their own foodways, they seemed to enjoy the freedom of living without their families, but at the same time missed familiar flavours, struggled financially and did not find time to prepare, purchase or to even have more balanced foodways. By contrast, some medics mentioned self-regulation to have healthier foodways, although this was a contrary case for the majority, who believed their families ate unhealthily.

> Uziel (medic): Well my family eats quite wrong; I mean when I go back home is eating tacos almost every other day. My mom buys prepared food and tells us 'I brought you some tacos or burgers'. I eat very bad, I mean when I am here, I try to eat well and like he (peer) said, you do your weekly shopping, but back home is quite… and there everybody is accustomed. My mom, for example, cannot eat without the coke, I mean she starts with seizures, it's the exorcism.

HS's place of origin seemed to deeply influence their unhealthy food choices, although there were advantages that they appreciated as well. Another aspect of influencing HS foodways was how available and affordable it was the food they wanted in the place they were living.

5.4.2 Availability

Food availability was related to companions, however, mostly dieticians and only a couple of medics discussed this. In the views of the nurses who discussed this, all foráneos, mainly Mexican food was mentioned as the most available. Interestingly, all these students considered that these purchases happened mostly at home, rather than in the university environment. Perhaps this is slightly related to their views about food that is sold in the street. Even when medics practiced in the mornings and attended classes in the afternoon, it was clear how the distribution of meals in Mexico also influenced their foodways. With the aim

of showing the variety of food stands or locals available close to universities, some maps are shown in Appendix 5.

Most students had their midday meal, their dinner and sometimes their breakfast at home. They reported only purchasing ready-to-eat meals at university (hospital in some cases) for lunch, some for breakfast or (only if they had to) during night shifts. A nurse expressed how nurses could be healthy if they made an effort to obtain support from their teachers, as well as if authorities encouraged them to attend the dietician. *Chatarra* was consumed especially on exam periods. Nurses mentioned that there were not suitable conditions in the University to eat healthy and/or there are no proper conditions to bring food at the clinical setting in which they practice, and one expressed that "you take what you can" during their practices. Another expressed that she tried to choose low sugary foods for her breakfast, despite that food vendors outside the university did not usually sell this type of food. Actually, this student had a NRD, therefore tried to adapt her foodways:

> Yasmin (nurse): It is difficult because is food. Who does not like to eat? But well I don't know, I mean nobody would like to be restricted from her favourite dish, I wouldn't want to be restricted of *enchiladas*, but they've told me 'no, you have gastritis you can't have them' if they take it away from me I would say 'but why?' because if it is natural sauce, not Valentina or Botanera[10] they would say 'it's hurting you' and I 'why if it is natural?' and I would be clinging, but I think if I make an effort and try to take it out I could. Though it would mean to couple with all my environment. If my family likes sauces and there is always sauce but *molcajeateada* or minced but natural, then I would be like 'if I can't you can't either'; and I've always done this.

However, when she offered DA, she advised restricting foods to patients without considering the availability of healthier foods for patients. Not only was it evident how she restricted patients, but her family as well. At the same time, some medics described the characteristics of food they brought to university/hospital: cold, tiny, practical, quick to eat, whatever is available when they are walking to the hospital or are hungry. Regarding DA, a medic and a dentist said that workers, but also young parents very often did not have healthy food available, but only Mexican traditional (e.g. meat tacos) dishes.

Returning to dieticians in the FGI, who discussed this topic the most, they said that patients' families could bring their own preferred food. This was why they also offered to their patients a broad variety and highly available food choices. Interestingly, these views came from foráneos, who mentioned they had a broader food variety than in their places of origin. Dieticians from FGI purchased foods that they consumed at home in the nearest market, shop

[10] Industrialised hot sauces used to flavour snacks, with a citrus taste

or greengrocer's shop. Individually though, one said she tried to find something to eat at home, another bought from a rural seller, others tried new products and food combinations that were not available at her home. Lastly, one said that although there was a wider selection of foods in Mexico City, it was more expensive to buy them. In the next section, an important aspect that HS discuss with patients arises from traditions and customs.

5.4.3 Dealing with patients' traditions, customs, and beliefs

There was an indirect link between HS advice and their own food beliefs. For them, patients seemed to find a rationale for eating unhealthily, for instance, a participant's mother believed that coke had digestive properties. Patients listened to neighbours, rather than nurses because it is the "easiest, fastest and cheapest way" (FGI participant), nonetheless, nurses said that patients in clinical settings do follow their DA. Most dieticians were confident that patients tended to believe significantly more of what their neighbours, cousins, and websites advised them, rather than trusting in the professional advice. One nurse said that some elderly patients often "feel they have to die somehow anyway", thus rejecting DA. These patients were viewed as only accepting assistance, not advice. Only two female medics articulated views on this topic; they both agreed on how difficult, almost impossible, it was to change an old habit and follow restrictive diets.

A strong social representation that dieticians thought patients had, is how dieticians make them suffer and starve them, hence patients' reluctance to attend. Another dietician that had an affinity for dramatic arts narrated how this acting and showbusiness environment would only select very slim actresses and as a result, this population was likely to suffer eating disorders. She stressed that stigmatising obese people is becoming more common, leaving space for bullying.

Likewise, patients expect a thin dietician that would "truly teach" and preach to them how to eat by acting as a role model. This was emphasised most by women, although men also acknowledged this belief. There is a common belief that the desired goal for women is thinness (Vigarello, 2013). Some other dieticians believed that Mexicans care a lot about physical appearance and that losing weight should be faster, rather than a long-term process. A dietician said that they often linked their own beliefs (part of their lay knowledge) regarding foodways with what they transmit to their patients, another acknowledged that it is relevant to know about patients' cultural context.

> Verne (dietician): […] You do realise that people have a lot of erroneous knowledge, very erroneous of what it is their alimentación, because eating wrong only for a day will not make you diabetic, that's a consequence of a long period of eating wrong, of wrong habits; and I explained them: 'you are doing this, no worries, we can change it, you are in a good position to change at the moment, you are not ill you don't have anything, just a little overweight but you can handle this, first we need to change the basics, start with a few things'

It was evident how HS perceived physical appearance to be important for representing a professional image. Apparently, having the "proper" knowledge was not enough for many participants. Although in general, HS seemed quite interactive with their patients irrespective of their looks, almost all medics agreed that looks had an important effect on DA. A dentist agreed and said that HP needed to dress and look according to a healthy image that patients expect. By meeting these conditions, or at least when looking slim, they will represent an embodied "healthiness". Apparently, nurses said how often they were associated with being overweight, and this did not inspire trust in some patients.

Returning to how patients' customs and culture affected DA, nurses had similar views to medics by saying how unfeasible it would be that as professional, one changed people's cultural food preferences. The consumer is being taught about what they choose to eat but only media and sometimes the health providers tell the consumer what to select (Bertran, 2010). Dieticians went further in the discussion saying that they needed to adapt to what patients are used to purchasing, preparing and consuming, even inside a clinical setting. Discouraging the consumption of traditional foods to patients might prevent them from participating in their family's customs, and therefore it seemed unrealistic. A couple of nurses mentioned a Mexican saying "*Bueno, bonito y barato*"[11] to define what sort of foods they sought. Usually, this meant eating from street vendors or going to *cocinas económicas*. Dieticians also believed that a standard Mexican family purchased food at the closest local shop despite being more expensive, however, one of them claimed:

> Sabina (dietician): People can get used to eating canned vegetables because those are sometimes cheaper than fresh ones

This participant also said that Mexicans are not conscious of the importance of eating healthy because they have a tendency to buy from local shops, falling into unhealthy shopping practices. Another dietician, however, said that the immense cultural ignorance did not let Mexicans value "the immense richness that Mexico has regarding food" {Salma-

[11] Direct translation of the common phrase: Good, nice and cheap

dietician}. Regarding the limited DA that dentists provide, they believed children never stop eating sweets, not even as a preventive measure. Dentists mentioned that food vendors should be strongly regulated and banned from schools' proximity. They also believed in working hand in hand with children's families.

It is clear that HS reported perceiving resistance from patients to a healthy DA and above all, they would not want to change their habits, nor dieting practices. For most HS there was an apparent disconnect between the actual context of Mexican gastronomy and the relevant DA for patients.

5.5 Gender

In FGIs there were more males than females in each group. In IIs, the majority of dieticians were women, but for medicine and nursing there was a similar number of each. Regarding foodways, the role of gender was mentioned by two female nurses, who said that women should be at home cooking and taking care of the family (showing love through food) and men should be monetary providers of what is eaten. Three female dieticians reinforced beliefs that women (i.e. their sisters, mother and themselves) cook and select food for the rest of the family. This gender role seems to influence how nurses and dieticians take care of themselves regarding the preparation of food.

> Yasmin: Yes, we (nurses) do take care of us. Not 100% because for example, the nurses that are already married and with children are worried about their children or for them. There is always somebody who didn't have breakfast because she had to prepare breakfast for his or her children and had to leave them at the school and so on. Then they start having a problem and are not taking care of themselves so much. In addition, there are others that do that because they are not married and they worry about themselves, and they have their time and that's what we've noticed. Nurses with children have more overweight that the ones that are not married. This is weird it wouldn't have to affect but it does, and I've seen it.

It has been documented previously that women, in Mexico City at least, are indeed in charge of preparing food (Bertran, 2010) and of the care of the family (Chen, 2010). The perspective of how females can take care of children has served as an advantage for certain healthcare professions, such as dentistry (Birgit, 2003). However, in this research, one participant mentioned this as part of their role for foodways at home. Men, on the other hand, seemed to worry about money and how to maximise its use, especially *foráneos*. Perhaps they contented themselves with procuring food for themselves without complaining about

any particular food. Nonetheless, when it came to advising patients, they complained about Mexican food, although they recognised themselves as consumers of tacos and Mexican dishes available in the street.

When mentioning all HS constraints that surrounded foodways the following were salient regarding gender. Regarding favourite or disliked foods, males did not report any food aversions, which might be related to the evidence that their families or female partners would prepare food for them. This shows a contrast with the evidence that Alba et al. (2015) found regarding a general dislike of vegetables.

Regarding the procurement of food, only females mentioned constraints. Apparently, bringing food from their hometown is more expensive than choosing processed foods, especially the ones that are easier to get (e.g. pizza). Many social changes, such as greater participation of women in a working environment and expansion and growth of food vendors of all sorts (restaurants, canteens, cafes, street stands and so on) affect directly where, how and what is purchased and eaten (Bertran, 2006). Due to the increasing distance between employment sites and houses, workers need to find available, affordable and similar or familiar tasting food during their work days (Garcia-Brenes, 2010). Some authors have shown an adaptation of foodways to socioeconomic conditions, given an increasing participation of whole families in the labour market (Bertran, 2006). For the case of employment, one male particularly emphasised its importance as this was his source of subsistence. Females that reported having employment did not seem to notice an influence in their foodways but in the distribution of their budget overall. The following section describes an aspect that came only from women excerpts and shows how deeply internalised moral notions appear to be surrounding the foodways students would like to have. Other gender differences are highlighted in the next chapter.

5.5.1 Morality embedded with foodways

A relation between internal states and moral questioning was shown in HS. Medics seem to have more moral dilemmas than other HS, but they also seem more constrained by their training, which they believe to be difficult and distressing, in their ability to make food choices. Some medics, for instance, reported how their mood was low if their supervisors or teachers scolded them, or regretted how little they knew about a topic or studied at a class. Additionally, medical students reproduce a certain cynicism that they observe from their mentors and teachers (Castro, 2014). Some others pointed out their family struggles as the

main factor for anxiety and sadness. One particular participant showed strong emotional issues due to her NRD:

> Lisa (medic): […] I do not feel comfortable I do not feel happy
>
> […] I am furious about taking care of myself. I am angry that I cannot live my life to 100% as an unsettled teenager. I would like to drink (alcohol) like them and I see that they have so much fun, but I cannot participate in that.

She said that in periods of denial of her NRD, she would constantly binge, especially Mexican foods, which led to a worsening of her NRD. She had been learning how to "cheat" her body by following her regime when she was alone and breaking it when with others. When feeling sadder or happier than usual she would compensate by eating more foods, such as cakes. Although Lisa was struggling with her emotions, she also seemed to have moral dilemmas about her NRD, which are mentioned along with other participants' views in this next section. An embedded moral sense of their foodways was apparent in HS. Almost all extracts considered for this section contained words representative of the moral dichotomy (e.g. right/wrong, good/bad).

Among medics, Guadalupe expressed more ideas about this theme, reflecting on an internal conflict in which she justified her imbalanced alimentación with a lack of time and little willingness to shop healthy foods, but also always finding a way around it. Additionally, and like other medics, she described the lack of self-control and self-determination to be healthier in patients through the lens of moral notions about food.

> Guadalupe (medic): Well no because hahaha if they would listen (patients to doctors) they would have good control over their eating habits and all of that. […] depends on the patient because I think that the doctor complies with providing guidelines, and recommendations and if patients do not get involved is up to them.

She mentioned a blood test that "gives away" what patients have been eating in the past 6 months, even when they do not say it: "they don't say what they should and eat more than they should". She seemed to think that patients lie, and somehow, through this test, HS can uncover the "truth". Interestingly, Guadalupe also had an experience with her grandparents showing reluctance to consult a dietician when they were diagnosed with diabetes: "they will starve me!" they claimed. She then unsuccessfully tried to persuade her grandmother to eat fewer tortillas. This clearly shows an attempt to persuade her, as this was an apparent uncalled-for advice. Guadalupe was the participant that struggled the most at the interview.

Additionally, she reported consuming plenty of sweets, and a low mood due to her low confidence in her abilities as a medic. She looked conflicted during the interview and seemed to assign feelings of shame to her patients, rather than accepting shame herself. Another medic also battled with the notion of being a worthy medic, for instance sticking to healthy eating guidelines that she tried to teach to her parents but that she also tried to follow herself.

This research showed that women claimed to feel under more pressure than men to comply with social norms with regards to eating behaviours and physical appearance. Pressure has been put constantly on women to achieve standards for the thin ideal, which increases obsessions with food (Counihan & Kaplan, 2003). Reported feelings of shame, and past experiences, led dieticians to partially change their foodways. Dieticians mentioned a range of struggles that included moral connotations: memories of them being bullied for being fat at elementary school, low mood due to a hospital environment (practising) or having a temporary physical disability. The following is an example of how a dietician struggled at work and ate more consequently. Having a taxing and tiring job was another struggle for her:

> Gladys (dietician): the place where I work is a tiny place, so I do not have options to move because on the inside everybody is stand up then I cannot move a lot and I am standing. In addition, that makes me want to go out and do some shopping. I bought crisps, *churritos,* and things. I precisely started smoking when I started working here. I think is part of the anxiety that I want to do something, and I go out and smoke.

These expressions bring together what seem to be strategies to cope with their health struggles but also with their eating habits, which were also linked to their mental health. Another case that reflected an internal conflict was that of a female medic, for whom exercising was an obligation, and who was strict or relaxed depending on how her exercise and dietary routine was going.

> Lisa (medic): I also realised when I am lazy and don't do exercise my (glucose) levels increase, and if I do exercise I wake up on 80 mg/dl and so it's convenient for me to do it. [...] when I do heavy exercise, I can be more relaxed with my diet, and when I do not, I must be very strict and even that way, I don't achieve goals. Supposedly that in (the Institute of) Nutrition they gave me a list of how many portions of carbs and when I am strict I have to be counting 2 breads, 3 breads, how much I am eating and adjust it with what they have me, when I am in "light" mood I don't count (portions).

She "cheats" her body if her mother prepares a tasty meal; she first eats salad and then more of this meal. Clearly, she goes back and forth between being flexible with her food choices and being disciplined, self-controlled and strict regarding alimentación and exercise. She

transferred the use of these "traps" to her patients since she mentioned they lie, assigning a stereotyped view to their compliance:

> Lisa(medic): […] They are so stubborn... they tell you they will do it… all fat mothers taking her fat baby to consultation… they will not do it (follow DA).

Some of these excerpts describe moral connotations for HS´ foodways and for providing DA. A nurse clearly stated how she shared the "punishment" of her dietary restrictions (due to a NRD) with her family. Consequently, impassioned attitudes not only towards her patients but towards her family were shown. She often used words such as *damaging*, *excess* and *balance*, and was one of the few participants using a few health "warnings" (that happened if patients did not follow professionals' instructions) with patients in order to increase their adherence to DA. This and other ways of relating eating habits with moral connotations are explained in the following section.

5.6 Mixed emotions

This section explains the aspects reported by HS that were related to emotions and to a moral sense conferred in one way or another. Metal states, emotions, moods, ethical and moral dilemmas surrounded the relationship HS had with food and health.

5.6.1 Emotional eating

One of the most frequent aspects related to HS's foodways was how their own feelings and emotions determined choices of foods (e.g. for celebrating, grieving or sharing). Their mood or internal states also influenced food quantity, specific preferences, or as some mentioned, addiction to types of foods that helped them cope with academic, family and personal constraints. Table 5-3 shows food choices and behaviours of HS associated with internal states. It shows only an emotion/feeling/mood that was reported by at least 2 participants across different disciplines. These reports could be throughout the interview or in written data that was included as part of the diary/24h recall.

In the case of dieticians, who reported more emotions and feelings (from all disciplines) in their written records, if they were with close companions (family/boyfriend) they generally reported feeling happy and relaxed. On the other hand, when they ate with workplace

colleagues a couple of them described annoyance because of the distressing scenarios they faced at the hospital.

In their diaries, nurses did not report any sensation, emotion or feeling when eating; only a couple of participants reported feeling joyful a few times. More than half of nurses ate with their families and others ate alone; only a couple of participants shared the moment of eating with their partners. However, during the interviews, nurses reported experiencing emotional eating the most.

Medics commented more frequently on emotional eating in the FGI rather than during IIs. In their diaries, medics did not report any emotion or feeling. Perhaps the group dynamic or interaction with the researcher encouraged them to speak about this, or perhaps they did not have enough time to complete their diary with emotions and they were more open during interviews. During interviews, particularly the FGI, it was noticeable that they narrated how almost all their peers gained weight or became unhealthy during their hospital training, eating sweets to stay awake during classes. This is contrary to a study where HS reported decreasing unhealthy dietary habits amongst students in more advanced healthcare training (Alba, 2015). Various participants reported feeling stressed during their meals due to their workload and demanding timetable. They mentioned stress as a main trigger for eating fatty foods such as crisps, *chicharrones* or ice cream, although one participant mentioned that if he felt motivated (for example when doing exercise) he would choose salad as a main meal. During individual interviews, some medics considered it important to maintain themselves awake through chewing food or tasting sweets, gums or seeds during lectures and training courses. Three medics reported eating plenty of "unhealthy" foods (sweets but also Mexican traditional food) and some had binges: one participant due to a reported denial of her NRD, and the other two because of the anxiety associated with medical training.

Both medical and nursing students had more similarities than comparing other disciplines: they avoided eating when feeling sad, depressed and guilty, or as a punishment. Most students consumed potatoes in different presentations. They ate more than usual of any food when being relaxed. Medics expressed more emotional eating than dieticians. The main macronutrient associated with emotional eating was carbohydrates, either complex (e.g. whole grains) or simple (e.g. sugar), followed by fats. For instance, chocolate (which is high in sugars and fats) was more commonly eaten when medical and nutrition students were anxious. Other mental states associated with food choices were being busy, distracted and feeling down.

When dieticians reported feeling relaxed or comfortable in their social environment (i.e. family, friends or partner), they ate in a freer way (time or quantity-wise):

> Salma (dietician): […] but we need to do it and give oneself the time because I have noticed that it relaxes me, to prepare the food, I invest affection on it, self-love, in the end, it is what I am going to eat

This last student talked about emotional eating as well:

> Salma(dietician): […] if I feel sad I like to prepare food that reminds me back home, if I feel stressed I like sweet things, if I feel tired I crave coconut with *piquin* […] I've noticed that when I am very happy I like specific sweets, I like beer for example…

This passage corroborates how the social environment is a strong contributing factor to emotional eating and how dieticians were more directly associating foods or parts of foodways with their feelings.

Table 5-4 Food choices and behaviours of HS associated with internal states.

Discipline/ feeling, mood, emotion	Anxiety	Distressed	Distraction	Busy, overwhelmed	Feeling low	Sad, depressed	Guilt, punishment	Being relaxed	Being happy
Medical	Sweets, Chocolate peanuts	Sweets Biscuits, crisps Avoid eating	Sweets		Ice cream, churros	Avoid eating, biscuits, crisps	Avoid eating	Eat more than usual	Eat more Burritos
Nurses		Food high in sugar (not specified)	Eating plenty	Unmindful eating	Avoid eating	Avoid eating French fries, biscuits chocolate	Avoid eating	Eat big quantities	
Nutrition	Chocolate	Something sweet Biscuits Avoid eating		Something sweet Pizza and salad		Red/purple berries			Beer

Source: All interviews and food diaries

Other extracts about emotional eating are shown below:

> Benito (medic): I have a colleague that was telling us that the other day he didn't sleep and prepared spaghetti and he was eating all night and the following day. I don't know what they think but I wouldn't do that.
>
> Roberto (nurse): Yes, when I feel depressed … well, I don't even get it because sometimes I eat nothing and sometimes, I eat a lot. French fries, *esquites*, chocolate biscuits and only that.

> Uziel (medic): I don't know it's like your craving, today you are all relaxed and watch a film and you say I am going to eat a kilo of *chicharrones*
>
> Nayla (medic): You say today but that today turns out into every day (general laughter)
>
> Uziel (medic): But like today (after being told off by their medical supervisors) I bought some churros and I ate half a litre of ice cream because I felt awful… well, that really influences a lot…
>
> David (medic): I think it's influential, in my case, when I feel depressed or something, I increase what I eat but only in quantity.

> Gladys (dietician): I was with my parents and feeling relaxed […] I felt the liberty of ask for dessert, the *carajillo*[12] and things like that.

Although dieticians linked various emotions and moral aspects with food, they always gave explanations mostly related to their social environment, which included academic aspects. For instance, Salma tried to choose comforting foods (for her cravings) that she identified as "not that unhealthy". Others only mentioned emotional eating:

> Gladys (dietician): […] I feel like I eat quite extremist, one day I barely eat and the other day I clog myself of food
>
> Valeria (dietician): To be honest I always look for sweet things and chocolate; my anxiety takes me to those foods, partially…
>
> Verne (dietician): […] and the food is closely related with the person's moods because there is also an important link between what they eat and how they feel; then, there are foods that make me remember a person or a situation and it makes me feel better or worse. I think food is very important for anybody's mood…

Although this subtheme (which was related to a social environment) was not as broad as others were, it shows a particular mechanism at work on HS´s foodways which affects how

[12] Non-Mexican alcoholic cocktail

they deliver advice. This section discussed emotional eating on HS. The other way in which HS involved their emotions and food was if some had or suspected having health issues themselves, which will be discussed in the following section.

5.6.1 Dealing with mental health issues, internal states, and emotions

The mental health concerns or emotional struggles that HS reported, affected their relationship with food. In some cases, they reported that a medical condition or NRD fostered emotional issues, which worsened HS' illness control due to binge eating or compensations through food. Two females, one medic and one nurse, realised they needed to change their eating habits radically when they gained weight and were diagnosed with a NRD.

> Lisa (medic): [...] A lot of times you are not conscious of things until you are ill… likewise, I know friends that are already ill and they don't take care of themselves, because they prefer to fill themselves in pills and keep eating the same instead of trying to take fewer pills and eating healthier.

This medic expressed that, regardless of nutrition knowledge, professionals did not tend to apply this to themselves. In another case, a nurse manifested sadness at her inability to help herself:

> Yasmin (nurse): Well in occasions I am saddened about not being able to help myself because I study in health areas and I know what complications arise from not treating yourself properly… and sometimes I start thinking, well, that at some point I will do it but afterwards I have days where I get conscious about a lot of things. I've seen patients that have the same disease I have, and the same cause and I see them and …' I don't want to get to that' and I am sometimes disappointed because I don't follow healthy advice.

Her speech shows how she felt morally defeated to some extent given that she had the knowledge and yet, for various reasons, was unable to follow health advice, even after witnessing critical cases (patients) that started just like hers. In the following section, some HS explain the various ways in which HS expressed that patients are more conscious about their own diseases. Perhaps HS subconsciously believed their patients' experiences could show them how to cope with NRD.

5.6.2 "Good" to eat

When discussing how patients responded to HS recommendations, one dentist stated that he tried, as well as recommended, to eat traditional Mexican foods not very often, as he commented: "It is very difficult to think that what we eat there (in Mexico) is not bad" {Brandon-dentist}. Patients "confess themselves", as other nurses believed, on how they did not adhere to HS's dietary recommendations, but also complained of having "temptations" (food at the hospital). Regarding DA, most nurses believed that patients' trust in them depended on their behaviour with them. One female nurse expressed how patients, but also HS, made excuses not to have healthier habits. Another male nurse said adherence was related to the way in which HP or HS interacted with patients.

> Gonzalo (nurse): […] Many people have salt intake restrictions. Patients tend to say: 'Can I use only a little bit of salt?' There is always that concern and even if the query is minimum, they express that to you. However, it is always important that your patient trusts you because I've seen patients that prefer doing it or consult with other people, in this case, the nurse, because (sic) I've seen that some nurses answer you incorrectly, in an erroneous way. Going back to the salt example, for instance, I once heard that a patient asked the nurse what I said before and she answered 'No, I already told you not to eat salt!' That kind of answers made patients reject the restriction, as all their life they've eaten salt. Moreover, it makes you trust them less… I always try as Samantha is saying, to explain to them why and they go more convinced and even accept it quicker.

Other nurse interviewed individually explained and reinforced why patients lie:

> Silvana (nurse): I think it is more to avoid scolds. Because they often tell us that there are some nursing students or professionals that scold them. For instance, when a diabetic patient ate sweets, I've seen it too, doctors and nurses, they scold them 'you should do this or that' and then they don't like the voice tone. They tell us that is pointless to scold because the more you scold, the less they will listen. It is about talking, put the cards on the table 'if you do this, this will happen' and emphasise this is not scolding, it's only advice for their sake, for their health. But yeah, they themselves say I don't want you to scold me, I've been mistreated already.

Some dieticians recognised their moral dilemma when it came to discouraging patients from consuming foods that they themselves craved. A dietician agreed with patients' perspectives since she was also dieting. She expressed "the more is taken from you, the more you want it", but also said she started taking care of herself; however, this seemed to also increase her authoritarian attitudes towards patients. Another dietician expressed feeling somehow guilty of "transmitting" her unhealthy cravings to a new friend (who apparently was trying to be

healthy). In the case of DA, she had an inner voice that told her to follow her own recommendations, but she gave this advice regardless. There is an apparent incongruence and Chapter Six explores this contrast.

Dieticians admitted to a "weakness" for desserts; they "confessed" their cravings in the food diary, acknowledging that they did not necessarily eat as future dieticians should eat (healthily).

> Verne (dietician): 'What a disappointment of dietician'… well what I could find in my diary is that vegetables throughout the day are missing, and this is generally a problem with a lot of people, not everyone but yes… in general, I don't see many negatives to highlight in my diary. I know a lot would see many things more, that I eat cakes over dinner, that I have breakfast later on Saturdays, a lot of fasting times (sic), and all of these would contrast with the recommendations I provide because I always tell them to avoid leaving more than five hours without eating for "x" reason. Moreover, after that time metabolic changes start, I won't explain them to the bottom, but they already know no more than five hours. In addition, if they see in my diary my diet that I am having breakfast late, that I am waiting too long to eat then they would say: dietician is disappointing; he doesn't follow his own advice. In this aspect, I will notice that a patient would claim that.

> Zianya (dietician): I've done the whole recall and I realised, even having studied nutrition doesn't allow me… I am not completely healthy like all the world thinks, no. Then it was like, I mean if it's difficult for us that we know about the topic I can imagine how difficult it should be for other people to make a food diary, right? Moreover, remember everything we eat, but at least it was good as it made me see what I am failing, what is happening…

Some feelings of regret are evident from these students' speech. One, for instance, wondered whether she should try some strategies or avoid unhealthy foods for good. Additionally, it is interesting how contrasting the responses were between interviews and diaries, especially for emotional eating. Perhaps built rapport worked well or maybe participants decided to explain further with repeated interview prompts. All the above data shows that HS often hold a negative association with unhealthy eating habits and preferences, and emphasised the moral consequences to the point that these moralised views have a stronger influence than other factors that HS considered when offering DA. The presence of emotional eating, especially in medics, suggests that personal opinions or conceptions of foodways affect HS' perceptions of patients and how they believe patients respond to HS' healthy eating recommendations. The next section explores in-depth what participants mentioned about their professional knowledge and how they believed best to adapt and shape it to situations when they needed to advise on diet.

5.7 Giving education, taking information

When discussing DA, all HS except for dentists emphasised their need for learning, knowing and managing psychological advice as a central tenet to deal with patients' dietary issues, and to encourage healthy eating habits. Although "psychology" was the word that HS used to describe the specific knowledge that they need when analysing the data it became obvious that some communication tools and strategies, as well as a psychosocial and cultural approach, were necessary for them to feel more prepared to counsel patients on diet. The psychological tools, according to HS, should emerge from the context in which they are being trained (professional knowledge). Additionally, HS had a variety of views regarding their professional knowledge deficiencies. These gaps were constantly filled by HS's or patients' lay knowledge. The following sections present some tensions between these two types of knowledge and how HS experienced and practiced this during their training.

5.7.1 Lay knowledge

Although HS had lay knowledge from their beliefs, attitudes and value system, they were also trained with professional knowledge. A cognitive component in human beings is beliefs and these influence our experiences. Global values are detached from beliefs, and beliefs are more specific than values (Nairn et al., 2012). HS tried to regulate this lay knowledge through various strategies such as authoritative attitudes and sharing their own experiences. Patients' lay knowledge, on the other hand, seemed flawed for almost all HS. Having the "correct" knowledge on diet, alimentación and nutrition could improve patients' awareness of a healthy lifestyle. HS also believed that there was a lack of health and food culture in patients. Additionally, social representations seemed to affect the way in which HS provided advice and their perception of whether patients adhered or not to it.

Four nurses, two dieticians, two dentists, and only one medic discussed a lack of health culture and social representations. Almost all these students were foráneos and were individually interviewed, irrespective of their discipline. Interestingly, more than half of these participants expressed these ideas at the beginning of the interview. Perhaps they had embedded these ideas and were keen on sharing them right away. Perhaps they blamed the Mexican culture for the current situation on health. This means that it seems easier to assign responsibility in other people or factors, rather than on themselves. There were plenty of students who mentioned several patients' views regarding health, food, alimentación, and diet. The information provided in Table 5-2 shows only a few examples of the broad variety

of beliefs that HS encountered when dealing with dietary issues. However, as this is second-hand information (what someone perceives someone else's views to be), it is not analysed further.

Table 5-5 HS' corrections of patients' beliefs

Reported beliefs of patients	Interpretation or response from HS
Eating a fruit cocktail (with cream, honey, granola) is a healthy combination	These cocktails are high in sugar
If patients only ate "bad" once, they could get diabetes	They do not, it is a range of factors
If patients do not eat fat, they are healthy	Not necessarily, because the body would respond differently depending on the circumstances

The following excerpt provides another example:

> Yasmin (nurse): For example, fruits. I mention all the fruits he (patient) can eat, because for example all diabetics, I don't know why, but they always want an apple. There is no exception for anyone that doesn't like apples. I am just like 'ush, how can I take them away right?' Then the best is teaching him a variety of fruits that he can consume; and what is more like apple. For example, pears, not the green one because is too sweet, but there are some yellows that have a bitter flavour. Though they are still pears. I told him 'yes that one will be alright for you, more or less'.

Nursing and nutrition students were the ones that spotted patients with deep-rooted lay knowledge, who often listen more to their *comadres* (godmothers[13]), neighbours, grandmothers, friends, family, and even the Internet. Interestingly, students that had certain predispositions to chronic diseases had more lay knowledge, especially at the beginning of their studies. Integrating professional knowledge then was not difficult considering their own health struggles. A few nurses agreed that the more professional training they received, the less flawed information they would have. Furthermore, HS seemed to perceive that the lay advice that patients got from other sources seemed to be more important than professionals' word.

> Brandon (dentist): Then a lot of people keep thinking that orange juice is healthy with its fruit and cream and oats and honey it's the healthiest they can take. In return, though they are taking a poisonous bomb in their body, and more if they are fatty because of diabetes or something like that.

[13] Translation of godmother/godfather: *Comadre/compadre* is used in two main ways; first as a godparent (through the church), and second as a very close confidant, friend, one who shares a great deal of activities together. In Spanish speakers, it is traditional to accept one another as *compadre/madre* when you share that very close bond. *Source: https://www.thefreedictionary.com/godparent*

> Veronica (nurse): I do ask sometimes […] where did you get that or who said that to you? Sometimes it was the neighbour, the internet, or marketing, and they say "let's see if it works" but essentially is what the grandma or the neighbour told them.

When it comes to how HS are perceived by patients, it seemed clear that if a dietician eats something which is thought to be unhealthy (by a social representation convention), the professional knowledge of the dietician could find a way around it when other might question them.

> Verne (dietician): Because there will be the critic of why he (the dietician) is saying not to eat tacos in the street if it is something that I (dietician) like but that does not necessarily have to do with my profession. We would have to separate; a dietician does not have to follow a stereotype of a certain way of eating. We also need to make this clear, and if I know the food properties, I will know is not bad.
>
> : […] It is not that we are not role models, is just different, each person is different and a role model, I don't like it (the concept), because it will be like a goal that we all have to achieve or a stereotype. In addition, the truth is that I think every person is different, we wouldn't have to try to be someone else, in this aspect, alimentación.

Another dietician agreed by saying that knowledge is the best "weapon" to defend themselves and avoid the powerlessness that some dieticians feel when interacting with medical professionals, for instance. She stressed that these power issues should not exist since HS are seeking the best for their patients and should not compete amongst other HS about who had knowledge. Most dieticians described that a lack of accurate knowledge, a lack of a preventive health and food culture, as well as a lack of trust from patients were important barriers to successfully providing DA. Moreover, if doctors did not consider nutrition relevant, patients were the only ones affected, especially with a result of low or non-improvement.

Some dieticians, especially during the FGI, believed that the social representation that patients had of the dietician is that they only teach patients how to lose weight. Indeed, there is evidence that weight management is not addressed by physicians overall (Pollak et al., 2007), and therefore, this idea may have been assigned to dieticians. Additionally, dieticians had to look thin to provide advice for dieting, but almost all dieticians agreed that they should strive to eliminate this social representation that Mexicans hold but that also some of them, as dieticians, have embedded.

> Ramona (dietician): First of all, they (other health professionals) should listen to dieticians practising in the hospital, because some doctors are annoying, they think "oh they will only tell you what to eat", well yes but you don't know what are the health effects of each food.

Although this subtheme is described more thoroughly in Chapter Four, when relating DA with a culture in which HS promoted a healthy diet, various participants reinforced the idea that a dietician needs to be skinny and look "good" because patients are judgemental and do not wish to be seen by someone with "evident" weight problems. This suggests that dieticians are more affected by patients' lay knowledge and beliefs. They emphasised how patients believed that dieticians only lecture or tell off, though they clearly wanted to get rid of this social representation as well. Indeed, banning fats has been evidenced in a similar context by nutrition educators (Yates-Doerr, 2013). However, other dieticians (individually interviewed) witnessed how other dieticians scolded patients during their practices. They also said that other allied health professionals reinforced this belief:

> Verne (dietician): Well realising what he is doing wrong, I won't reprimand him, I won't yell at him. Because we have always had a paradigm (sic) of dieticians of 'they will tell you off, they will tell you this, they will take away so many things from me' I always heard so much about this during my practices. When I was in paediatrics, a doctor said, 'I leave you (referring to patients) with the dietician who is going to scold you all'; and I don't scold anybody.

This view was also expressed by other dieticians, who said that very few patients self-referred or had the initiative to ask for consultations or attend preventive health talks. Lay knowledge, according to them, is scattered due to educational differences but also due to the lack of homogeneity in national guidance regarding diet and nutrition. In the next section, there are some highlights of what HS considered would improve their education, and this education was considered in this research as professional knowledge.

5.7.2 Professional knowledge

At the beginning of this chapter, it was shown that one salient aspect HS considered on a direct and indirect way for providing DA was their emotions and how they dealt with them through food and other foodways. It was also shown that morality had a great influence not only for HS foodways but also for the way in which they seek for patient compliance. This second section has explained so far how HS negotiated with the lay knowledge patients bring and how they seem to integrate their own lay knowledge when providing DA. The current section describes aspects of professional knowledge that operate as mechanisms of how HS

counsel on diet. HS had various views on how this professional knowledge needed to change in several ways, which is presented in the further three subsections.

5.7.2.1 Better planning of professional training

This section discussed HS views about their practices in healthcare settings, about lecturers, teachers, supervisors, and curricular contents. All these (except for the later) seemed to determine the professional information that HS learned on foodways and nutrition. Nonetheless, only a few nurses discussed this, and male medics seemed to have more views than women. One nurse believed that their curricula should consider addressing nutritional issues, which lead them to diseases. Perhaps these HS wished to include nutrition in their curricula. Nonetheless, the ability to deal with "alimentación" issues would depend on how much (if any) nutrition knowledge was taught to them, depending on their teacher. One dentist believed that if patients could not afford a dietician, they as dentists should do some research about it for them. This suggests that nutrition and diet have lower relevance for them in their daily practice, as dentists and a couple of participants from this discipline stressed the need for at least basic nutrition knowledge during their training.

Dieticians commented that there were not enough policies in place to target and tackle patients' needs and that strategies were needed to shift to a more preventive approach for healthcare generally. They emphasised how they needed more and better theoretical knowledge, as well as to link this with a practical application. They were aiming to offer "good" recommendations (especially for their family), but also to improve their own foodways and to earn their families' trust. Doctors in similar settings have recommended "good" products (Yates-Doerr, 2013) such as these dieticians. Most dieticians believed that having professional knowledge, and constantly preparing themselves, should characterise them.

> Hernan (dietician): says a lot about us, because it is (about) practising what we are preaching. […] It is also quite important that you focus on the knowledge that you are providing to the patient.

> Salma (dietician): Let's say that knowledge is in constant evolution, and if I, as a health professional, have biases (sic), I would be only falling into a mistake, I would malpractice. I am trying to remember the word, I think is iatrogenic, then instead of doing any good, I will be harming. In this case, ignorance would not be something "good", it would be my worst enemy. Obviously, I see my decisions from two years ago, there are not the same that I apply nowadays but I don't blame myself either for the

> decisions I made two years ago because I didn't know what I know now. Then I think the key is to evolve… and updating, always updating, don't get stuck in past guidelines, but improve every day.

Salma's changes in her eating habits also had to do with limitations of her knowledge, but she applied the newly learned strategies to cope with this, which might mean a successful incorporation of the professional knowledge that she was asking for. There is a general sense that educational authorities need to plan educational curricula more thoroughly, updating them with information that could help them address their patients' most important issues in nutrition. Other studies from the empirical literature showed how HS nutrition knowledge is limited (Frank et al., 2007) and should be increased and expanded (Memel et al., 2018). This was also shown in this research, where students from all studied professions stressed how their professional knowledge needed to increase, and this is discussed in the following section.

5.7.2.2 Offer more professional knowledge

Drawing upon first all HS, excluding dieticians. Firstly, two dentists considered important to know more about "correct" alimentación, since they also needed to identify diets high in sugar as well as help their patients to maintain a healthy mouth. However, one said this was not their main role:

> Romina (dental): […] we can't be 'know it all's' […] this is something that rather belongs to dieticians, and that is why there are dentists, like changing the roles wouldn't be good.

She, however, expressed that she advised against sugary products. Something similar happened when documenting doctor-patient interactions in Guatemala (Yates-Doerr, 2013). Secondly, she pointed out important to acquire psychological skills to deal with patients, which was seconded by medics. Some psychological aspects that medics considered useful to learn were observing body language in patients, being empathetic and perceiving emotional needs that patients wish to satisfy through eating. A medic from FGI expressed:

> Nayla (medic): What they have mentioned is that we as doctors need to be very observant, capture, maybe they don't tell you verbally but with attitudes, they have, gestures and things like that you need to realise and that is why you need to develop that part very well. Learn how to observe the patient.

Only a couple of medics considered psychological advice fundamental to their training. This seemed paradoxical with the data that reports how they compensated several emotions through food.-Concerning nurses, some participants acknowledged the importance of psychological aspects as part of a holistic view of health, and other participants added that having a supportive tool such as listening to patients empathetically was important. When it comes to dieticians, there was a specific participant that expressed many constraints regarding her foodways and at the same time made evident her need of receiving a deeper psychology-related training:

> Gladys (dietician): […] I feel we need to be more empathetic with the patients. In the psychological aspect, we need more preparation. Here at the career, we have had psychology subjects and all of that, but only to understand what is happening to the patient. In fact, they tell us "if you know that patients have psychological issues, send them to the psychologist". At least if they would say to me "I can't see you because you need to go first to the psychologist" I would stop attending to the dietician and neither do I go to the psychologist; I would find someone else…

In this passage, Gladys is conflating what she would do in her own life with what patients may think. To some extent, she seemed to disregard the role that psychologists may play in DA, but also for herself. Gladys was one of the participants with a higher reluctance to link her own life with her patients, although she seemed to project her thoughts on them. However, she was going through a stressful period. There was a tension between referring patients to the psychologist and providing the few psychological advices she knew. Other dieticians did show little confidence when using psychology as a tool since they acknowledged how they themselves might need psychological advice.

Dieticians (especially the ones interviewed individually), highlighted the importance of using psychology to promote adherence to DA the most. Various students used some communication strategies (e.g. actively listening, avoid lecturing and being empathetic), which they related to understanding more psychology to provide successful DA. Other dieticians associated patients' struggles with their own and showed higher empathy for them.

> Salma (dietician): […] if they (patients) arrived with a headache it's now gone coz they saw the doctor, then is also learn how to manage the patients' emotional states and there is something that maybe we will need to reinforce on health professionals. Put psychology, I mean have psychology but not only as a subject but know how to apply it, I mean really apply psychology to the patient because if we don't convince them, it can be the best diet in the world, even cheaper, but….

It was evident that dieticians perceived that it was important to address DA with some psychology knowledge. They seemed to realise how important food was for people's emotions. Maybe prompts and interview rapport helped to talk about this or perhaps they were more conscious about it after writing their diary.

> Gladys (dietician): I believe so and what always happens to me is that I put myself in the patient's shoes. I think it is very easy to say "don't eat this, don't eat that and eat healthily" but you really don't know in which mood the patient is or what is going on and that he/she can't consume the foods you are asking him/her to. There was a moment when I started to gain weight, which I flowed off the handle, I ate many sweet foods and ate all day. It was when I said I was going to start to eat a bit healthier, but it was so difficult for me. I think more than anyone thinks, don't know if it is anxiety or what, I saw something sweet and wanted to get stuck in all of it. That part I tried to control it, but at that time I thought, it is not that easy to say to your patients, you don't know if they are having an anxiety attack.

Using psychology with patients can help them feel comfortable with their diet; however, only one dietician mentioned that referring patients to a psychologist was fundamental to promoting this adherence.

> Salma (dietician): […] at the moment I wouldn't know that because I haven't studied psychology to the bottom, what would I have to do to prepare myself […] it is worthy to recognise when one doesn't know something and know when one does […] the grounds for applying that I don't have it at 100%, then I think I will need to do some research…

It is noteworthy how dieticians were more aware of the importance of psychology for DA, unlike another HS. This might be associated with their curricula since dieticians recommended a subject related to psychology, but also with communication strategies and with interview skills. However, they seemed to expect more related training given their experiences when practising. In contrast, nurses only considered mental health as part of a holistic health concept. However, only FGI nurses (who did take a couple of nutrition-related- subjects) believed this. None of the interviewed nurses discussed the theoretical importance of this. For medics, sociopsychology was considered an important tool to assess patients' potential adherence, especially to know the kind of attitudes patients might show in a general consultation, which did not seem to be related to DA. In some cases, it was noticeable how the educational differences amongst different types of universities could impact and shape some pressures, attitudes, and knowledge about how DA is provided.

> Valentina (dietician): […] then she (her mother) tells me 'you are telling them to have breakfast and you are not eating anything', that's why I want to change my habits now, and now I am feeling ok, because I said it's not only from one day to another. I didn't decide to study nutrition for the fact of 'oh I want to lose weight', I wanted something related to medicine but not Medicine as such. Then when I saw that in clinical nutrition, you could link medicine and nutrition I thought it was interesting, and I said I want to know more about nutrition, and then I started really liking it. So when I started studying nutrition, it was something I was really looking forward to, but I tell you, it's not something that they implemented to us a lot ' lose weight, do exercise' like at other universities I've heard that they get them that a lot. I mean I didn't feel pressured about that aspect here.

In this case, the participant is narrating how she chose her profession and how the focus of her University is not on counselling on diet, which helps to lower the pressure and social representation about dieticians. Apart from the few bits of knowledge on nutrition, non-dieticians considered it important to have psychology knowledge to address their patients' issues and dieticians considered this quite essential for a successful DA. In the next section, students stressed how their training needed to adapt to the current patients' needs.

5.7.2.3 Healthcare education needs to be reshaped to address communication issues

Nurses mostly, but also dentists, believed that if they had efficient follow-ups with patients, were empathic, and exchanged cooking tips, it was more likely that patients would control their blood tests, and therefore adhere to their recommendations. Male medics were the ones that considered referring (to dieticians or the nutrition service) patients as important. If they refer patients, they are pragmatic and efficient in their field of action (Castro, 2014). However, they also suggested recommending patients to increase or decrease certain foods according to patients' needs and the level of "healthiness" of this food. Generally, they did not send any meal plans unless the case was "too obvious" for a dietary follow up.

> David (medic): It would have to be quite obvious [...] I haven't seen patients with dietary problems, I mean I have, but if it's related with a pathology, yes I realise that immediately, but if the patient is healthy and doing well, , a problem that affects their daily life I think I wouldn't realise if something is wrong with their alimentación.

Another medic mentioned that there is a general "ignorance" of how to read labels, for both HS/HP and patients. Clearly, if medics were unsure of how to provide DA, they would not "transmit" significant information to patients. This makes sense since Kaufer-Horwitz et al.

(2018) reported that not even Nutrition students and professionals understood food labels correctly.

Medics, however, seemed to be taught to approach diseases with medications, but often complications arise. One medic said in the FGI that "obesity is barely a cause for consultation" but that almost all their patients could use DA given their overweight and obesity. Additionally, dieting seemed to be difficult for some patients; therefore, they often looked for extra help from alternative medicine, which is practiced in some parts of Mexico (López-Chamorro, 2018). Another medic said that there was a curative focus in medicine, which was also encouraged by conferences and short courses. This has been reported by other authors, who have pointed out the curative focus of medicine in Mexico (Rodriguez, 2008).

With regards to nurses, a couple of them reported that their own experiences increased their knowledge, and therefore they tried to help patients organise their meals and budget to achieve a better alimentación. One noteworthy aspect of the data was that, unlike other HS, nurses were always keen on answering any question that patients might have, integrating both their professional and lay knowledge (this last one could be shared by patients). Indeed, only one nurse mentioned that they should rely more on professional knowledge when answering patients' queries, rather than only telling them anecdotes.

Dieticians from FGI only discussed examples around self-control and moderation of portions rather than banning specific foods to patients. Despite mentioning the importance of having the knowledge and knowing how to transmit it, a dietician also highlighted that, as a generation, dieticians can strive to gain the skills and training to be more capable of providing consultations, which is one way of gaining knowledge:

> Valeria (dietician): I feel that there are patients that don't understand you, even when you explain them in many ways, they don't get you. So, I feel part of nutrition is to know how to express yourself, and then many dieticians don't have that, a lot we don't. However, we are a generation, at least mine is unruly, but I also think that we are a generation that demands. Because the ones that graduated recently they were honestly quite disoriented with regards to knowledge […] now this new principal has opened a lot of doors to us in a lot of senses, we did not have this subject (Nutritional assessments), and actually, it was all chemistry. Nonetheless, despite this principle has given us more knowledge, both clinically and about nutrition, and has opened more doors, I still feel we have a lack of… because we are disoriented in many things... However, if I could offer a consultation, I would feel good and a bit capable of doing it, with my strategies and obviously with the literature.

Individually, another dietician mentioned that professionals need to make sure they persuade patients so that they have self-responsibility for their health. She assumed that patients do not take this responsibility or commitment, therefore outcomes are poor. Only one dentist found it important to avoid overwhelming patients with too much information.

Some strategies that several students expressed to promote patients' adherence to a healthy meal plan, were: reducing one portion at a time, counting slices or portions to keep control of what they eat, and linking food colours with benefits, as well as having thematic consultations about labelling, shopping, using illustrated materials, among others. To assess patients and give them enough consultation time, one proposed to hand them self-filling short forms in the waiting rooms. Adapting DA to patients' learning styles but also to their foodways, customs, preferred tastes and ways of preparation was also important, according to dieticians.

> Valentina (dietician): Reduce portions is good because I can't tell them (patients) don't accept anything or don't eat because it is what it is. So, what I've tried is to reduce portions, I mean I said yes to everything (their parents in law offered). Do you want dessert? Yes. Do you want this? Yes, and now my way of thinking changes and I say no I mean I try it but, in less quantity…

In sum, this section shows that HS spotted various areas for improvement in their healthcare education, particularly pointing on nutrition and DA knowledge deficiencies, but also regarding some tools that turned out to be part of a broader concept than psychology, such as, for instance, psychosocial aspects that support patients' adherence. Some consequences of the various deficiencies in the professional knowledge that HS learn have an impact on their patients. However, there seemed to exist an issue for HS in accepting patient lay knowledge, and this difference also appeared to be a barrier among HS and other professionals (or students from a different discipline) because each one (patient and professional) hold certain perceptions and social representations that are reproduced by both. On the other side, HS manifested a number of issues when trying to use "correct" or professional knowledge. These issues, according to most HS, are originated from the type of training they undertake or the focus that their University has, and in this sense, they suggested to expand, improve and apply the professional information is being passed to them. The next section shows the types of attitudes, strategies, and views that future HP take to advise on diet, which although perhaps seems to be logically related to their professional knowledge, combines lay knowledge and other experiences that HS brought previously form their social and cultural environment.

5.8 Only we know

This section presents the different ways in which HS showed and shared with patients, the knowledge (mostly professional but also lay) they had. Authoritative attitudes were predominant, and some power imbalances were shown especially when discarding patients' lay knowledge.

5.8.1 Patronizing attitudes when advising on diet

Discipline is a word that most HS used to define what they needed and what their patients lacked, and in this case, a medic was drawing on an imposing language:

> Dalila (medic): What he must drink less is coffee; therefore, if we go to a restaurant and he craves coffee I tell him 'you shouldn't drink it, but it is your choice'. Moreover, in the end, he does not drink it, but I want to remind him. He knows he shouldn't drink it, but I want to remind him he should not do it.

Nonetheless, they provided an assortment of strategies to apply for DA, using words such as measuring, moderate, reluctantly, good, not good, setting example. Similarly, Dalila agreed to what several dieticians expressed on how patients feel when they are reprimanded, and therefore HS left patients decide whether they take the DA or not. A male medic did not report any tensions; saying that patients should be happy when being referred to a dietician:

> Benito (medic): I think they even see it as better, they say 'ah the doctor sent me with someone that knows more about it than him.

When describing dominant attitudes, some medics also placed responsibility on patients:

> Uziel (medic): […] Maybe you know that you are wrong but if you are told then you realise, 'ah I got a problem and I need to take care of myself', even when the person does the opposite to what he is recommending".

Indeed, it has been reported that for allied health students such as nurses and physiotherapists, the main source of nutritional knowledge is a dietician (Thomas et al., 2006). Some dieticians and nurses agreed on several strategies, ones with stronger attitudes than others, in order to be successful when advising on diet. Some examples are presented in Table 5-3:

Table 5-6 Strategies proposed by HS to improve patients' adherence to DA

Planting a small seed in them (prompts for a healthy eating)
Discussing the consequences of diseases with patients
Cheering patients regardless of their progress
Balancing eating habits
Offering reasons for dietary recommendations
Correcting wrong beliefs as well as differentiating “good/bad” foods
Offering rewards through food if compliance is achieved
Offering “good” guidance to the whole family
Open patients’ eyes with a “good” alimentación and its benefits
Restrict certain foods for patients’ sake

Although some of these strategies seem more authoritarian than others, the majority are related to communicating issues that are addressed with HS’s dominating attitudes. On the other side, one dentist considered she did not have a “good” diet; therefore, she would not recommend it. Another dentist recognised that it is important to control the consumption of sweets and sugary drinks, especially in children. She often told them: “if you keep eating sweets, this will be ‘wrong’ for you and we would be wasting time… you will come again and they (teeth) will hurt you” {Romina-dentist}, which shows a decisive attitude without considering perhaps the attitudes, knowledge, and beliefs that her patients brought.

Sometimes HS, especially medical and nursing students, mentioned that only when patients have a health problem right in front of them, they could truly understand and be aware that they need to make changes in their alimentación. One medic mentioned that patients did not increase their awareness of a preventive alimentación until they saw a picture of their body from their insight (e.g. X-ray). In the nursing FGI, some judgemental attitudes were shown towards patients, as some believed that patients lacked self-control and self-regulation. This same participant mentioned that patients had everything at hand and did not know how to apply this.

> Samantha (nurse): It is not so much what you eat but how much you eat because of the tortilla for example... Tortilla is not good or bad... even a pizza is not good or bad. (It) is just the portions you will eat. For instance, here I have heard to only very few people that they don’t like coke because it tastes good to you (laughter) but it is about the self-control that you have to eat your food because if you eat 5 tortillas on each meal then you’ll be eating 15 tortillas per day, per day!!! It is a quarter of a kilo or I don’t know how many are in a kilo, but I feel the problem is the amount of food that you will eat! Likewise, if you will consume a pizza slice and with that, you are happy, but it is the temptation of having the whole pizza for you and you eat it. Maybe half or ¾ but you eat it. The problem is the self-

> control that you should have to consume the food then that is why I think there are so many obesity problems…

This nurse is clearly assigning responsibility for making healthy choices on patients. Overall, it seems that professionals shared any type of knowledge about diet and alimentación, but it is up to patients to follow this. From this expectation, some power issues were suggested, and this is explained next.

5.8.2 Power issues amongst HP/HS

When it comes to DA, the existent inconsistency between the different types of healthcare curricula has a stronger effect on how this is delivered. The general belief is that medics are in charge and nurses only follow instructions. Only foráneo(a)s medics said that their curricula and their practices in clinical settings were taxing, and they ended up having little to no time to address patients' nutrition issues. Moreover, some power issues within the healthcare system were suggested. Overall, HS mentioned power issues between patients and HP or between HS and HP, which influences how DA is delivered. Mainly dieticians discussed this topic, emphasising the importance of demonstrating to other HP their ability to succeed in their job, even when medics were "in charge". Two nurses mentioned that invisible hierarchies, whether this was between their families or with other qualified nurses, represented a barrier to taking preventive measures. In the same vein, one dietician mentioned a competition amongst HP, saying that even nurses made fun of the dietician's role. Another reported situation was that male HS described how some patients wondered why they had diabetes when they have not eaten a diet that puts them at risk of diabetes, and HS tried to dispel their fatalism as a way of being empathetic. In contrast, male and female medics expressed how doctors did not believe diseases will happen to them, which can also be a way of reflecting how they consider having knowledge as a powerful weapon against this fatalism (Davison et al., 1992). One medic talked about this apparent superiority.

> Armando (medic): In medicine, there is a lot (sic) who feel superior. They feel they know so much that they won't suffer anything.

Pertaining to congruency, women were the ones that placed emphasis on more planning in education, and also commented that "doctors don't follow what they recommend" irrespective of whether they had food or nutrition training. However, perhaps improving the gender gap in representations in educational institutions has allowed these institutions to thrive (Bourdieu, 2001).

Evident hierarchical issues were reflected when HS mentioned they need to demonstrate to patients how well or how much they knew about nutrition and alimentación. At the same time, this learning process leads them to competition amongst other HP/HS, which might also trigger antipathy amongst HP from other disciplines.

These views showed that this hierarchical dynamic could affect HS's interactions with patients. One nurse stated that professionals had condescending attitudes, due to a fear of being replaced at some point. Another participant mentioned how nurses lack patience and answer aggressively to patients regarding DA. A couple of more nurses said that professionals were blunt with patients, unlike HS.

> Yasmin (nurse): I believe in settling disputes because that affects us and always have good communication. If we don't like something, we should say it, not shut up, maybe at that time it hurts and looks at your group as your second family. They are the ones that you'll see every day, try supporting each other because sometimes the degree will be hard and they'll say 'no, I can't handle this' and in an opposite case maybe there is somebody that understood well and is willing to help you but you don't want.

An important barrier related to these hierarchies amongst HP was perhaps determining how DA is offered and how HS follow up with patients. A nurse stated that these hierarchal issues were reinforced when nurses spent their spare time at the hospital reading only beauty product catalogues, whereas medics read about physiology, anatomy and related subjects. There is a clear inter-professional barrier, and this might have an impact on how nurses and medics address patients' issues such as diet.

On the side of the medical academic environment, some medics mentioned that they were abused from supervisors, at different stages of their training, which had an impact on their health (e.g.: smoking, lack of sleeping, drinking coke and coffee in excess). Interestingly, only male medics held a high regard for their supervisors. One said that he wanted to follow his supervisors' example, who provided valuable DA to her patients and showed them healthy snacks. Some nurses also believed their teacher's influence was positive.

When changing roles, some nurses recognised difficulties when dealing with professional nurses, but also with other professionals, such as medics. Hierarchical issues at training stages were identified by most nurses, and this might act as a barrier for the acquisition of their disciplinary knowledge, not to say about DA:

> Tadeo (nurse): […] they (patients) trust you, to talk, to tell you more about them, what they did wrong and stuff. Nevertheless, if for example, the doctor tells you that you must drink this, but before this, the nurse told him, well then, they don't trust you or trust the nurse more than what the doctor is saying.

> Yasmin (nurse): [...] actually they limited us for doing the techniques and all of that, they always sent us 'ay, you go', the chores that no nurse likes, I don't know why nobody wants it if supposedly they are studying and that's due to a desire and with professionalism…

> Roberto (nurse): I do learn when I've got the right person, when a nurse is really teaching, but more than that, helps me and supports my practising. I understand that some get desperate but if they let me practice and let me study, the following day I arrive and I tell them the technique, how you do everything and that's it.

Other power issues (between HS and patients) were mentioned especially by dieticians in a private university. One said that in a professional relationship, HS should not have to share their personal life. Another added that HS need to find a way to tell their patients' how their lay knowledge is wrong but without offending them. The last one mentioned the different training among nutritionists and dieticians, which put them in a different position to educate patients. A nurse from FGI showed in her speech how sometimes the knowledge breach between medics and nurses seem to be wide.

> Samantha (nurse): […] For instance in the medical instructions sometimes the doctor writes liquid or soft diet and if you don't know any of that and your patient is being given a diet that is not that, then you can intervene in the instructions that they are commanding you. Likewise, the doctor says soft diet, but your patient requires a liquid diet you can say the doctor 'hey, you know what? My patients need my knowledge, he needs this diet and you are ordering others. What is next? The doctor can tell you well I will obey you, well not obey but he considers this. However, right there you can tell him that if something happens to your patient, he should put his signature in the medical notes so that it says you decided to prescribe this diet even when I said no. Then legally you can cover yourself, but according to what you know, and you were taught.

Power imbalances had an effect on how DA is offered and how HS receive training and assign certain roles to themselves and to other HS/HP within clinical settings' dynamic. This is something that is certainly picked up in the discussion as influences the type of information and education provided on diet.

HS' lay knowledge comes with certain cultural beliefs and social representations that are integrated with what they personally eat, and what they advise patients to eat. Furthermore, HS had numerous views on how their professional knowledge could be restructured, expanded and reinforced, in some cases through a specific image (of themselves) that persuaded patients to eat healthily. To this end, HS views suggested their use of authoritative attitudes when trying to implement certain guidelines and social representations, which was reported to cause power imbalances not only with patients but also with other professionals.

5.9 Summary

To sum up, it is evident how HS experience various pressures, firstly to adapt their foodways according to what their peers, companions or family normally eat or to what is expected from them according to their social context and circumstances (for example to stand out and be seen by HP). Their family in this sense could represent a constraint or sometimes an advantage when it comes to having healthier foodways. Another crucial source of pressure was the Mexican culture, which seemed to determine HS' foodways but also whether patients would adhere to DA within this context and how feasible the official DA was in practise. The social pressure was also framed by gender, and other responses appeared to be different between males and females.

An additional problem seemed to be an obesogenic environment with a high availability of traditional food, adding a burden for healthy DA that HS are supposed to offer. Furthermore, social media was also seen as a partial burden for the notion of being confusing regarding healthy dietary guidelines.

Some structural factors that played an important role in defining both foodways and DA were time (as period, stage or as an interval), money and employment constraints to get the necessary training to be a professional. These views were gendered as well, which suggests that various aspects of HS foodways, but also social representations about food and components of advice, depend on the gender of the person providing advice. Most students moved from their original homes to study in a different location. As most HS were foráneo(a)s, for some, curiously more men, it was challenging to maintain their customs, whereas for others it was an advantage to have to adapt their foodways given the demanding timetables. This was because HS' universities were surrounded by traditional food vendors with preparations that HS sometimes missed (e.g. home-made food). Additionally, patients' traditions and customs (about foodways, dieting, and losing weight), along with a lack of a

health and alimentación preventative culture made DA challenging. Patients' stereotyped view about how a professional should look to teach about "healthy foodways", shaped HS foodways and consequently the negotiation of this with patients. The next chapter explores more about the characteristics that define and support the DA provided by HS.

This chapter also explored the main mechanisms affecting DA and how this was delivered by different professions. Emotional eating is abundant among HS but some of them were also dealing with health issues themselves and this affected their relationship with food. There was a strong moral connotation when HS integrated their lay knowledge with what they were learning to advise on diet, and some showed authoritative and authoritarian attitudes towards their patients. It seemed that some HS needed psychology advice for themselves but also more communication tools to convince patients to make healthier choices. However, some HS blamed patients' culture given the notorious knowledge gap between lay information and qualified advice. This was evidencing potential conflicts between HS and HP, between HS and patients, and between the different professions due to social representations and stereotyped views of how HS were supposed to behave and be knowledgeable about.

An important aspect for which HS require to "show" a healthy physical appearance is for patients' credibility and for a health profession's congruency. The next chapter expands on HS's views in this regard. In addition, chapter six addresses the main research question, by exploring various tensions between two complex processes of foodways and DA.

Chapter 6 Foodways influence on Dietary Advice

6.1 Introduction

In previous chapters, I explored the mechanisms that surround how DA is offered, in what context, to what patients, and how this can be improved, increased or complemented. Apparently, HS reported their wish to be more knowledgeable, not only on the subjects of nutrition and diet but also on using communication tools and psychological strategies to promote adherence. In this sense, only a few HS considered it relevant to include their own foodways in the provision of DA, but they also recognised the importance of having healthy eating habits themselves. This influence and negotiation are expanded in this chapter.

HS are expected to understand and be able to deliver advice to improve health and prevent disease, at least according to their curricula. Additionally, they are supposedly expected to know how to apply this knowledge to themselves, yet the evidence shows that their health and dietary practices are, according to them, less than exemplary. When it comes to diet, there seems to exist a paradox of "knowing" but not "applying", and the various interviews intended to trigger a self-reflection on whether their own circumstances let them overcome this paradox.

There was an obvious contradiction between how HS explain their own behaviours and how they blame patients for the "unhealthy" behaviours they show. Some tensions around whether or not they are congruent with what they know to be healthy and what, ultimately, they eat are explored in this section. In most cases, an open conflict is evident, since most of them are aware that setting an example or being role models for patients will be a congruent way to promote patients' adherence to DA, hence bringing credibility to their profession. This chapter is divided as follows: the first section is called *Do as I say, not as I do*, by referring to some HS, particularly medics, who do know how to have a healthy alimentación and do not follow it, but also referring to patients that quite often do not believe in what HP do but rather in how HP look like (an obese/overweight HP). This section also presents the various tensions between HS's own practices and patients' practices.

The second section is called *Making an Impression* and analyses the various ways in which HP/HS potentially lose credibility when they cannot maintain a credibly healthy lifestyle or select healthier food. This section also shows an evident influence of HS's foodways on their

DA and analyses the way in which some HS intend to be role models for their patients and potential barriers to it, such as social representations. Lastly, the section ***Building on Credibility*** shows that, although dealing with the "burden" of being role models or of social representations is difficult, a few HS have tried and successfully applied strategies to achieve this congruency. These influences, therefore, have worked in a beneficial way, both for approaching their patients and for improving their foodways and lifestyle.

6.2 Do as I say, not as I do

This section is about credibility and the kind of explanations/rationales HS come up with when drawing a line between their patients' explanations to unhealthy foodways and their own. Only medics openly and directly accepted that they did not need to follow what they recommend, although FGI dieticians also suggested this. It appears that the medical culture accepts or even encourages unhealthy behaviours for various reasons, such as standing out amongst other colleagues as professionals (as presented in chapter five). On the other hand, this might mean that medics are completely aware of this incongruent attitude but continue it.

Some medics questioned whether they could demand an improvement in patients' alimentación if "almost all medics have a level of obesity" or "they (patients) watch medics doing exactly what they tell them not to do" as stated in the FGI. Having consistently unhealthy food choices does not necessarily prevent HS from knowing about healthy eating (Foster et al., 2002). Some other HS accepted their diets were not exemplary, or sometimes they simply do not like "healthy" foods, therefore they would not recommend it to patients.

> Benito (medic): […] If the doctor would smoke, he (the patient) would say 'why does he smoke if he is telling me not to?' I mean he would be losing his credibility but is for the same that the patient should not know that.

This participant along with others mentioned that medics do not usually follow the advice they offer, hence they are not credible.

Medical students said that medics tend to drink alcohol, Coke, plenty of coffee, they smoke and are overweight or obese; therefore, it may be almost impossible for them to be credible. Regardless, they still "suggest" patients should lose weight and avoid all these mentioned habits. One medical student though, mentioned that it is the doctors' responsibility to promote their credibility to patients. Indeed, this would make sense in an environment where

doctors have the highest status (Timmons & East, 2011). Another student stated that she has seen how doctors bring alcohol to their practice, which, while a wider issue, is related to credibility.

According to them, only the general practitioner is credible, but interns, residents, and students "do not eat well, how they should eat". However, being empathetic might work to transmit this to patients. Only one medic pointed out that their own experiences when dealing with patients' pharmaceutical treatments are used to prescribe medication.

Curiously, a medic justified their "wrong" food choices as something unavoidable for them. One medic even mentioned "gluttony" (almost whispering), as the cause for these habits. Ultimately, all HS tried to find explanations for their unstable foodways or for their cravings; for instance, lack of time, lack of discipline or poor or no family support.

> David (medic): It is a double moral, I think. Yes, because one part is the theory sure, but I think that for some of us is a bit difficult to apply it. We try to do it, we all try because it is stuff that we study every day, the consequences of a bad alimentación, but there are times in which we simply forget or we cover our eyes to that idea.

> Nayla (medic): yeah well, the fact of knowing that we are harming us, well at least for me it has caused me conflict. I've tried eating better, do more exercise for example and change a bit the alimentación

In general terms, medics responded vaguely or did not offer many explanations as to why they did not link their own foodways with DA. Perhaps they do not feel this type of advice relevant for them to know, which is consistent with the little training they get on nutrition, diet, and guidance on food.

As a matter of interest, almost all participants (regardless of the discipline) related many diseases, if not all, with a "bad" alimentación, including obesity. With regards to dieticians, one adopted a resolute attitude when negotiating diet with patients, suggesting that "nobody is perfect… being conscious that, like me, they made a mistake, but they can fix it". He had additional claims on credibility:

> Verne (dietician): I would reply... I don't know what to reply really, it is a very different case, each person is different and maybe they won't follow at face value everything, but one always tries doing the best one can. If they think they do it better than I it is ideal, maybe I am not exemplary but I explain to them that nobody is perfect and they could identify, because people will not follow at "face value" everything I give them but understanding that they did wrong this thing, they can make this

> good the next day.. And that's it. Changing little by little maybe it is very difficult, suddenly a person spends five hours without eating and then they remember eating but they realised that 'crap, I left these hours pass, no problem, I eat now and tomorrow will act accordingly'. That they (should) be conscious, as I am that I made a mistake and that I can fix it, and know if you fail in something you will not die, nothing will happen to you, it can be improved, we are here to improve always and learn from our mistakes in that matter; I could tell my patients.

Another dietician, for instance, did not feel guilty about socialising and sharing food with others. He is one of the few students who recognised that what is "wrong" or "right" for each person depends on their personal characteristics. Nonetheless, they, as dieticians, seemed to hold a moral authority to advise on diet.

Across all HS's views, opinions and attitudes, most of them showed various contradictions, mainly between what they claimed to think patients should do (to be healthy) and what HS/HP practice/do themselves. Table 6-1 shows these contrasting perceptions on the same topic, gathered from HS from all professions.

Table 6-1 Do as I say not as I do

About them (HS)	About others (especially their patients)
I eat due to my emotions	My patients have psychological needs that I might/might not address
I have self-control and know when to stop	Patients need to learn to have self-control
I can make mistakes (re food choices) but I can fix them, and it is not such a big deal	Conscious patients should change now to avoid making a mistake tomorrow
I cannot eat in the streets and be seen	It is unacceptable that patients eat in the street as it is greasy and unhygienic
I can eat butter (any other "unhealthy" food) but can control it	They eat in excess because of their lack of will power
I don't have time to exercise	They must find time
I have "real" food consumption subjected to various constraints	Patients lie about what they eat and have low commitment
I can eat whatever and justify myself with my knowledge	Patients need to stop eating x, y, z for well-based reasons doctor (HP) has
I don't have to look fit/thin, hence healthy to advise on diet	They have many misconceptions and prejudices against HP and should only be bothered about themselves
I do not tell off; I do not nag. I only recommend what is for patients' own sake	Is up to them to follow what I recommend

I can use my own experience to convince them	Patients have wrong beliefs, biases and social representations

In the past two chapters, these contradictions were analysed, and the table above shows one of the main issues emerged from the thematic analysis. There are evident power imbalances due to knowledge, behaviours, and the social and cultural context in which HS advise. For instance, on one hand, HS informed that patients did not have proper knowledge with regards to alimentación; on the other hand there were some HS, in this case, a medic, who reported having lost weight without any professional knowledge but her own experience and lay knowledge, although she used different words:

> Dalila (medic): Hum, well yes… when I stopped eating bread well a lot of things with sugar I had a significant weight loss, so that was on my own, the truth is that I didn't go with any dietician and I think that he would have helped me a lot. But I did it because either way, I didn't have any wide academic training because I was in secondary school… but one hears that carbohydrates increase the weight and so it worked, apart from exercising, it worked for me. Now I don't feel I have a goal and I haven't tried losing a lot of weight, but I believe that if I try, it will help me likewise.

During the interview, however, this participant mentioned that she liked to remind her father not to drink coffee even though he knew this already. She also seemed to enjoy advising other colleagues on diet using partly her experience, although perhaps not consciously.

The lack of credibility seemed to have an origin with the reported incongruent behaviours of HS, especially medics. Only a few participants mentioned that it was impossible to make patients adhere to advice when HS do not demonstrate an exemplary behaviour themselves. This answers the research question denying an interaction between HS own practices and the advice they offer, not only for the case of diet but for preventive health as well (which includes lifestyle). Some also added that, although they have the knowledge and even sometimes enough support, they just did not care or did not want to do it. The next section then discusses some barriers that HS reported to prevent them from being congruent and credible when it comes to food and health-related aspects.

6.3 Making an impression

This title encompasses what this section is presenting, the way in which HS attempt to educate (although most of them use the word preach) by their own example, thus

demonstrating that their actions are aligned with their knowledge. In most cases, there was a negative relationship between their knowledge and their foodways (the more they said they knew, the unhealthier they said they were). The next section describes some tensions surrounding the attempts to make an impression on their patients. In case they "fail" at showing a healthy image, they offer several explanations for how this should not be a problem when offering DA. It is worth mentioning that HS views expressed by non-dieticians illustrate how they only seem to receive basic (often called insufficient) dietary training, and this was the main rational to justify that they could not be prominently healthy.

A few HS applied their lay knowledge for themselves before having access to a professional one, which ultimately increased their awareness to manage patients' health issues and potentially provided an anecdote to tell their patients. One medic and one dentist (with broad knowledge of nutrition) successfully dieted using their own knowledge. On the other hand, a dietician tried unsuccessfully to apply his lay knowledge. These are some examples of how lay and professional knowledge were combined to achieve personal goals, particularly for dieting, resulting in different outcomes.

When explaining further the reasons behind their unhealthy eating, three nurses, as well as a couple of dentists, blamed their demanding curricula; for instance, "on-call" times were blamed by nurses for their weight gain. Eating in the street turned out to be controversial amongst two medics interviewed individually; one said that despite the broad variety of Mexican *antojitos*, patients can make healthy choices, by changing ingredients or avoiding salt, cream and similar. Although these students did not necessarily claim to have an exemplary diet, some had that hope because of the importance of promoting health within their profession's remit. Only a couple of medics stated options to eat healthier than they currently seem to do. An example follows:

> Lisa (medic): Because is easy to say it, but not to do it and I think that they (health professionals) do have healthier options, but they prefer… […] even buying an *esquite* with a teaspoon of mayonnaise is healthier than eating nachos.

One dietician said that eating from the street vendors (whether tacos or *chatarra*), while wearing their white coat with a Nutrition emblem will make them lose credibility. Uniforms are a symbol that demonstrates professional boundaries (Timmons & East, 2011). Therefore, eating tacos in the corner may be the opposite of what HS are supposed to recommend.

> Sabina (dietician): […] They (patients) see you in the consultation and tell them no you can't eat tacos… and then you go out with another doctor and you, as dietician are there, where there are a thousand tacos. Well, what example are you offering as dietician when you are taking them away from them (patients)? […] you are not even offering an example of a good alimentación.

Nonetheless, a hospital or clinic environment is normally surrounded by street vendors of all kinds as mentioned by various participants in Chapter Four and as I observed. HP are also consumers and, according to a medic, it is incongruent to promote healthy eating and at the same time eat outside the hospital the traditional *guajalota*. Some other medics mentioned that urbanisation, as well as globalisation, promotes new junk food vendors that are not related to Mexican traditional food, hence the current health issues. It seemed, though, that food in the street (Mexican or otherwise) does not contribute to a healthy diet.

Nurses made strong statements about patients' biased beliefs, that, according to nurses, can lead them to develop diet-related problems. Some others suggested to encourage exercise (not specifically for aesthetic or slimming purposes), to try eliminating some erroneous unhealthy beliefs. A dietician, on the contrary, blamed their own training for pushing them to choose unhealthy breakfast of *torta de tamal* and *champurrado* or, even worse, skipping meals. Nonetheless, nurses did blame other factors such as a high availability of unhealthy food (e.g. *garnachas*, *gorditas*, *tortas*, *tamales*, Coke) as well as the common conception of nurses as frequent consumers of these foods.

> Tadeo (nurse): […] I am proponent to believe that advice is not applied by the adviser. In this case, attending my patient will make me look quickly for solutions, there is time for everything because whilst sorting your stuff for school you could be boiling food or cooking meat... I could find solutions but why didn't I follow them?

> Roberto (nurse): […] everybody criticises us because of what we eat, *gorditas* or *garnacha* or whatever. All of the patients I've heard out and patients' family outside the hospitals start to mumble between them 'look what he eats and he wants to come and teach me that I don't eat this that I don't drink soda and he has his big coke and all"

Only three nurses mentioned that due to their hectic and demanding curricula, they were unable to follow their own DA. However, as long as they were conscious of that and they made efforts to eat healthier, they claimed they can be justified. A nurse who described her own experience reinforced how all doctors only reprimand without following their own health advice, mentioning how her father's doctor insisted he stop smoking and yet was a smoker himself. The only dentist that had an opinion about this said that patients did not

know professionals' practices or behaviours, but even if they did, this would not have an impact on their patients' practices.

In this section, a constant negotiation is in place. Some HS justified their unhealthy eating by mentioning various factors, and others accepted their "failure" without a rationale. However, the consensus said street food or Mexican food was unhealthy and not advisable. Maybe this was also due to the peer pressure in a FGI and the need for agreement on the convention of considering foods sold in the street as unhealthy. Yet they see its consumption as an inevitable consequence of their student lifestyle and, although they try to discourage its consumption, when patients spot them (in the street) they juggle their way around it to remain a healthy "authority". The next section presents narratives on strategies to both tackle a social representation of "the healthy HP", and promote a healthy image and lifestyle to transmit to patients when advising.

6.3.1 Unbelievable

Although almost half dieticians believed that all advice should be adapted to patients' needs and leave to one side dieticians' foodways, some other dieticians showed hints of conflict because they saw their lives and routines as different from patients'. One student recognised that she was tempted to make her diary up but indicated that showing her "reality" will help more to avoid prejudices. There were clearly various moral issues around what diet was, and what dieticians ate as normal human beings versus how they are seen as professionals.

Regarding some prejudices that patients had and that affected HS' credibility, the physical appearance of HP, especially of dieticians, was widely mentioned. Only local dieticians had views on this issue. Many of them believed that physical appearance, as well as their own actions, did matter for credibility.

> Ramona (dietician): […] yeah but… what if she (dietician) has a problem with the thyroid, and the patient doesn't know […] does she have to be thin and has to be quite pretty so that the patient believes that she is a good dietician? But the majority of the Mexican population makes this link if she isn't pretty or has a beautiful body then no…

On one hand, this participant is assuming what patients' attitudes will be, clearly projecting his opinions to them. However, there is the possibility that patients might feel more comfortable with HP who disclose personal practices (Frank, 2004). On the other hand, she is proposing a strategy to gain credibility. Another dietician said that controlling her own diet

and having an ideal number of meals per day, would allow her to advise on this. Two nurses agreed that physical appearance highly influences patients.

> Samantha (nurse): Ah well that's another one. Well, I've been, we've been told that we should preach with the example. If we say take care of your health and your weight, do not smoke or drink alcohol, we also need to do it, but one professor told me 'imagine if you tell your patients lose weight and you are 20 kilos higher than your normal weight', patient will easily tell you 'you do it first and you come and tell me'. A lot of patients think so and even we think so. Well if you are asking me to lose weight at least (do it) both of us together. Then I say it is an important influence the image we offer to our patients about our health and in our whole person.

Commenting on this, one nurse said that if, from the moment they start studying, they followed a healthy diet, they could promote healthy practices. Another nurse considered crucial that HS self-commit and avoid excuses to be healthier, in order to transmit this to patients. She mentioned that this could even be a prerequisite for prospective students of any healthcare profession. These strategies differed with what was presented in table 6-1. However, rather than strategies, this type of discourse seems to suddenly shift into authoritarian suggestions.

Moving on to a different aspect of congruency and credibility, physical appearance turned out to be important for HS to show a professional image; apparently having the "proper" knowledge was not enough for many of them. For them, a healthy doctor looks thin, avoids fizzy drinks (especially in clinical settings), does not smoke, takes care of their personal appearance, and exercises. A dentist agreed and said that HP needed to dress and look according to a healthy image that patients expect. By meeting these conditions, or at least by not being visibly overweight, HS said they could show their "healthiness". Since apparently nurses are often associated with an overweight image, it was reported that this did not inspire trust in patients.

Dieticians in the FGI put more emphasis on knowledge and on the way of interacting with patients rather than on the way they looked. One female believed that prejudices, or a HP being overweight or obese, should not prevent patients from following professional advice. Nonetheless, a dietician mentioned how important is to "sell" an idea of health (through physical appearance), so that patients can say "I want to be like her". Another dietician mentioned that some of their colleagues adhered to extreme diets (fluids only or prolonged fasting, for instance) with the aim of looking thin. Another dietician added that patients did not see their blood tests or inside the body, hence if they look thin and fit, they will believe

in their advice. From all these ideas, it seems clear some of them have internalised this association between thinness and health. Lastly, a nurse and a medic believed that HS knowledge and looks had a bigger impact on patients' acceptance of DA than HS' own behaviours, including foodways. This is crucial to answering the research question because it poses an opposite scenario to the central idea of this thesis that the DA influences foodways and not vice versa. Individually, HS placed more emphasis on other aspects relevant to the relationship with patients: approaching strategies, food environment, banning foods catalogued as "unhealthy" (by social representation), differences in tastes and aversions.

Opinions were divided when referring to the role of dietician. Some participants referred to the belief that dieticians only eat salads, but only a couple mentioned that they are not really strict about their eating habits. Additionally, dieticians seemed to be subjected to the belief that they only prescribe foods socially represented as "healthy" and doing the opposite will risk their credibility. Dieticians seemed trapped between recommending foods or educating patients by removing these right/wrong, healthy/unhealthy, allowed/prohibited dichotomies, which find their origin in social representations. What is interesting is that an opposite relationship was mentioned by a couple of them: when HS' advice was successful, they were more likely to apply this in their own life or into other patients' care. Some dieticians preferred this way of managing patients because they did not want to instil "bad" or "wrong" habits in them, and also because they seemed to be trained to tailor recommendations only on patients' times to eat, resources, preferences and health states.

> Salma (dietician): […] I also noticed that my first mistake was not to schedule times of my patients to their lives but what I thought it was correct, then later I modified this and it was like 'ok tell me your day, how you do it, what are your times what if we adjust this but to what you need, not what I tell you is correct but what is correct for you' and that was when I noticed a lot of improvement.

This was one of the few dieticians who acknowledged that, although HS' own foodways exert an influence on their patients', it is better to adapt DA to patient needs. As it has been shown, some HS have dealt with dietary issues themselves and they sometimes linked this to DA, which suggests that their experiences represent the foundation of their dietary counselling. In fact, only students that were individually interviewed revealed struggles related to what they believe would be a congruent DA. Perhaps feeling the peer pressure of FGI, HS did not want to articulate how they should be congruent. Although they acknowledged that their foodways are unhealthy, they always found a number of reasons for this. Interestingly, in the FGI they only offered various strategies for patients' unhealthy diet. This shows how using at least two types of interviews, as well as combining a different

source of information (food diaries), proved beneficial in studying HS' foodways and their link with the provided DA.

Previously it was mentioned that mainly medics, but apparently all HS, believed that diseases will not befall them, hence providing them with the necessary sense of moral authority to provide DA. This is slightly related with what others (Foster, 2002; Yu et al., 2015) have reported about higher confidence in medical students to advise when their own weight was normal and their own food choices healthy; as well as low confidence when HS considered their health behaviours poor (Bake & Harrison, 2013). One medic and one nurse declared that patients consider them role models due to their past experiences. Another medic used her lay knowledge to lose weight, which increased her empathy, though she did not use her own dieting experiences. These were the only situations in which they related their experience with DA. Despite this, at least five participants from medicine considered it important to be congruent as a means to achieve credibility. On the other hand, at least half of the nurses noted that nutrition knowledge should be emphasised in their curriculum and to patients, for instance, through preventive talks as well as suggestions on diets that are often banned to patients. However, another nurse demonstrated annoyance because HP do not follow their own advice and she was trying to actually follow it. Another nurse recommended changes to their peers, such as exercising and better managing their time to eat healthier, so they could avoid the mistakes she made. Lastly, one said that, although they can provide only basic nutrition information, her own experience could add to this recommendation, telling patients how she has achieved her dietary goals.

When being a role model was mentioned in the nutrition FGI, hesitation prevailed, and although they discussed some of their health issues at some point later in the interview, they did not mention how this could help to counsel on diet.

> Sabina (dietician): (silence) then is that… I feel you would have to… be alright… you first, so that… make a good (sic) for everyone else. There is no way that if you would have diabetes, and your leg is being almost amputated, you could tell patients 'don't eat four pieces of bread'. It is like illogical; well I think is unreasonable. It wouldn't have coherence what you are recommending if you are not, yourself… when you're not even alright. This means you couldn't give recommendations when you are not fine.

The expectation to be role models, and to eat only vegetables or salads, is common amongst HP (especially dieticians) and therefore they could always be judged by patients, especially when choosing foods such as pizza or *frituras*. That does not mean to say that there is no

room for variety or that they are not allowed to make unhealthy food choices but, apparently, the relationship between food and health is mediated by social representations. Somebody mentioned that patients found it hard to believe that HS have gone through a similar stage, for instance when struggling with their own weight. The usefulness of their lived experiences of becoming healthy was seconded by another dietician. However, a negative effect of sharing their experiences was shown by a couple of cases in which dieticians have recognised that DA sometimes seems unrealistic, and they have struggled to follow their own recommendations.

> Ramona (dietician): I said that I had to be an example, then I had to take my 5 meals per day. Then we (she and her family) did like only two main, breakfast and midday meal… and I remember in the consultations telling my patients, I always said to them: 'no sir, you have to eat five, or at least make three' and then I told myself 'How can you say something that not even you do?', then I, like, started to take control…

In this last passage, incongruency of actions and recommendations is evident from Ramona's reflexions. It was clear how she saw a connection, but she was not encouraging her "unhealthy" practices. On the other hand, a participant showed how what she has or has not tried in her personal life (foodways) has an influence on what she would recommend.

> Valentina (dietician): […] products or foods that I am used to are the ones that I recommend because I cannot recommend something I haven't tried. Maybe if a patient comes and tells me 'hey, I found this, can you consider this?´ then you dig in a bit and you tell him right at that moment but general recommendations are based on foods or products that I've seen that have helped me. Recipes that have helped me, certain functional foods, based on articles or experiences but I do not like recommending something I have not tried […] I would not know how it works.

This section presented views on how HS negotiated social representations with patients, particularly to defend their professional image of a "healthy" practitioner, their social status that prevents some of them from following their own advice, and their moral authority to address patients' dietary issues, making connections to what also worked for them. Above all, HS described a positive way to approach patients as well as proposed to improve their own health practices, and this is included in the last section of this chapter.

6.4 Building for credibility

A common view amongst interviewees was the broad range of strategies, as well as positive attitudes, to offer a healthy DA. For HS, building a relationship through these aspects is crucial. Almost all dieticians proposed constructive strategies to build a successful relationship with their patients. Strategies from nurses, on the other hand, were suggested mostly by locals. More foráneos medics mentioned some as well, they suggested taking at least five minutes to advise on nutrition, especially for specialised doctors who know they will be treating mostly overweight and obese people. This is interesting because it seems that foráneos living and practising in Mexico City are able to provide more information, potentially from their experience of living outside their places of origin. In the case of nurses though, their experiences of being locals provided more strategies to complement their training. Taking care and cultivating the relationship with patients seemed to have a special place in the views of medics, therefore they provided a rationale for promoting trust, empathy, understanding, confidence, and respect.

Some strategies that dieticians proposed were more aligned with what they believed their patients needed. The main strategies mentioned were adopting the patients' perspective as well as being empathetic, looking at them in the eyes respectfully, building an interaction in which HS could transmit nutrition knowledge carefully, and in which patients can truly understand this. That is not to say that boundaries cannot be set even when non-judgemental help should be available to all patients irrespective of their situation. Dieticians explained that patients can follow advice without guidance when they really adhere to what HP recommend; some of them though, declared that patients harboured the notion that nutritional advice is a squared and not flexible enough to their needs, therefore HS needed to adapt healthy recommendations to patients' current eating rather than changing their diet completely. Others mentioned that if their teachers followed their own rules, they, as students and future professionals, could learn how to transmit relevant advice and their own experience to their patients. However, it was important that they followed their own advice or apply this to their family to really understand how it works. They could make suggestions for their family's diet, trying to keep them motivated to be healthier. Motivations and "positive vibes" will help patients to overcome obstacles, dieticians argued. One dietician reported she felt able to offer basic recommendations when and if she could actually apply this to her daily life.

In the FGI, one dietician said that most of them tend to recommend what they like and avoid suggesting what they do not like, although this depends on each professional. Bringing food to the university and to clinical settings to actually show patients how it is possible to eat healthily was proposed by a couple of dieticians.

> Hernan (dietician): I would stick with predicate with the example from the beginning. Commit yourself and get fully into what you are studying because your whole life will be based on this. More than anything is like Samantha is saying, in the academic aspect, if the school won't bring you opportunities or possibilities to practice since the first semester maybe it is better if you look the best way to practice it, look for your family, look for your boyfriend or girlfriend. Look for support somehow and always be practising this is what will give you the experience because the theory is the base.

However, in instances in which strategies have failed for dieticians themselves, they would not recommend these to patients; for example, in terms of eating dessert a dietician mentioned:

> Gladys (dietician): I think that if it is a person that wants to lose weight I would not recommend it because it could happen what happens to me, I say 'good, only a small chunk and afterwards this was a big chunk and then this big chunk turned into a piece. Then I don't recommend this because it's something that has happened to me. For me it works more if I don't eat sweets in the morning, I don't crave sweets for the rest of the day.

Overall, dieticians proposed positive strategies to create the opportunity for patients to be healthier by linking their own practices. With regards to the nurses, they mentioned it was important to first of all start with themselves and to improve their health. They proposed: sharing healthy foods with their colleagues, maintaining an exercise routine, avoiding Coke, preparing healthy lunches for school, giving themselves time for eating a balanced diet, have appointments and follow-ups with dieticians from the beginning of their studies until they become professionals, health promotion amongst professional nurses, to apply their professional knowledge with their families first, to explain carefully to patients as if this was a lived experience from nurses or as if they knew exactly what they were talking about. An example of this last strategy is shown as follows:

> Gonzalo (nurse): […] also negotiate with your patients has worked for me, for example, I don't like to make up stories but I am good at it, I tell them often 'for instance, you didn't know but I used to drink a lot of coke before but what do you think? This and that happened, and I tried leaving it little by little but obviously, I couldn't take it away. Besides, I don't drink coke now and I don't crave it. I try it and it tastes nasty.' And then my patient looks at me like 'will this be true or not', then they assimilate it and

> say 'I will do it' and if you do it with a good attitude and say to him 'sure, note that this and that happens, this can affect you in this, plus it has a lot of sugar […] you start to explain in a more physiological way but in ways in which the person understands you, and then you leave him like 'I didn't think about that'. Because patients, we know, they tell us 'don't eat salt', and you know why you can't or why you have that restriction, the patient doesn't know 'what does salt has to do with… or how?', he doesn't know, a lot of people give it for granted then they don't explain it. If you explain to your patient if you tell them a spoon or a quarter of a spoon… they won't miss it, the issue is that you get your body used to… but it all depends on the treatment to your patient and also of his openness.

Following Gross (2015), attitude is a mediator between stimuli and response; for instance, those participants who considered a fat patient "lazy" but showed an empathetic attitude through their made-up stories. A nurse from a different location also shared her experience when using her professional and lay knowledge, in addition to other professionals' recommendations that could benefit her and her family.

> Yasmin (nurse): An author recommended that everything at its given time and rhythm, things go slow and not fast because it affects the body and if the only recommendation was about leaving something it should be little by little. If I drink coke I drink only a glass but I try avoiding it a bit more, I served less until I got to half glass and then a bit less and with a glass of water and balance it like this, for example in my house I took the coke away, I took it away from all because we do drink a lot of fizzy drinks, we are going to have breakfast and with soda and no, it's wrong. Early in the morning, I start doing some juices or my mom, orange juice is the one we love, or green shake and start sharing my diet with my mom and dad to help them. Because likewise, I suffer from (blood) pressure and although I say it is inherited, a dietician indeed recommended me to prepare an oat shake with apple but not with milk.

A couple of nurses believed it important to first lead by example and, second, to allow their knowledge and physical appearance to show patients how feasible is to be healthy despite their working rhythm. Lastly, one nurse actually witnessed one professor eating healthy lunches on a regular basis. To also encourage an empathetic relationship with patients, some strategies mentioned by nurses were to have regular contact with patients and maintain them motivated, to show them patience and kindness, unlike the other HP mentioned in the previous chapter. One mentioned that detecting contradictions in patients was crucial work against their reluctance and towards better adherence.

Along this line, only one dentist said that verbalizing consequences of a lack of adherence should be specified to patients in order to avoid aggravating a dental procedure but as a means of prevention of NRD. Some research has been conducted to understand how oral HP

make the most of their profession when advising in nutrition issues such as obesity and found out that they rarely advise on diet nor refer patients (Arora et al., 2011).

This section presented a number of strategies to promote adherence to a healthy diet but also to increase credibility in HS/HP. There was an overall understanding of patients' struggles in the sense that some HS accepted that knowledge is not always enough to encourage healthy eating habits, but the proposal of a feasible approach is required. The next section describes the tensions between what students know and what they apply in their own life or as recommendations to their patients.

6.4.1 Theory vs Practice

There seemed to exist a constant tension between theory and practice when this was related to food and diet. In the case of medics, they mentioned that doctors who have the knowledge and apply it to themselves are more credible. In the FGI however, participants seemed to avoid the question and just described that they have seen their supervising doctors unconcerned with diet-related issues. Although perhaps I was pressing them to reflect on their practices, they were struggling more to accept what other professionals (especially their supervisors) did wrong. The following statements are examples of a conflicting relationship between theory and practice from medics' lives.

> Uziel (medic): It is as I was mentioning before, my family eats quite wrong, and my mum is overweight, so I told her to eat better. She got angry and asked me 'how are you going to promote something that you are not doing? I mean just look at yourself!' and she shut my mouth so I said, 'she is quite rightly, I mean I cannot promote something I don't do'. Then you realise that you have a problem and that if you want to say something to the people if you want to promote something, well you must do it with yourself. You must dress well, eat well, and people do realise how are your eating habits are. And then with that, you can say 'mom I am thin (laughter)… eat well'.

> Nayla (medic): Well yes, maybe a person let's say with an average educational level might understand even if the doctor is overweight, but a person I don't know in a small town, well they don't have the knowledge, nobody has talked them about the topic and that a doctor comes and has diabetes or overweight, well in this case you are proving recommendations that I might not do, because he is not well informed previously or nothing and just looks at the doctor, well you are not inspired to change your habits.

Nayla expressed that depending on patients' educational level, they would take on board professionals' advice. Individually though, another medic said prescribing medicine is a

doctor's specialty and they do this on a regular basis; therefore, they are not exemplary in other aspects such as foodways.

> Lisa (medic): And because they have all medications at hand, and they know it (disdain face) … [..] Then they take their triple scheme. I knew 3 internists, all of them (were) fat and with severe hypertension, each one took 4 pills a day to control hypertension and even one day said: 'Well I left my private practice because I wanted to lose weight, take care of my alimentación and you know what? I couldn't! ' he got back to eating the same 'it was quite difficult to be your own patient' and so on... then imagine, even in a course they tell you that they couldn't, then they are still taking their four pills.

Interestingly, Lisa heard this anecdote in one of her training seminars, which means that this doctor used his own experience in a negative way; however it showed how difficult is for them to follow healthy foodways and one would assume they might think this is challenging for patients as well, which was often not the case in this research. Another medic said that they recommend the best they can, regardless of the doctors' own behaviour. Now, regarding dieticians, who are the ones that mainly discuss foodways issues with patients, the following experiences were described. Most dieticians seemed to reflect deeply on what they learn about unhealthy food choices. However, regarding their patients, most dieticians indicated to feel unprepared to face real scenarios or "what if" scenarios on patients' follow-up. Some reported their training was completely opposite to their practice.

> Hernan (dietician): […] Now we've been four months in practice and in those four months I've learned a lot more than in 3 years of career… because in the first semester we had a subject that was interview technique and theory, in which they tell you how is like a patient when is angry, upset, when he is stressed, how he treats you if he is lying to you and such. But that's in the theory. When you are in the consultation with the patient well you won't remember everything and you have to interact completely different. You won't be like a machine differentiating if he's lying to you, if he is stressed or not… because you haven't seen him either, you don't know him and it's something completely new to you. You have to adapt to what is the patient and how you will make your consultation. Then it is different from what we see here in theory. I tell you; a lot of things have been useful because they have been useful, but we have also learned more about our practices… I don't feel that capable but I don't feel that left behind either.

One dietician said that there should be professionals fully focused on chronic diseases, which was related to another stating that nutrition curricula were providing him with a deeper understanding of what happens in the body. Another dietician said that there were too many clinicians at their private practice and very few dieticians focused on disadvantaged/ vulnerable communities. One more displayed that HS should keep themselves updated but

she also stressed improving education because she said she did not feel prepared to practice without some support.

> Valeria (dietician): Hijole[14]…that the good of… nutrition is not the theory but the practice. That's when you need to put more attention, practices will teach you more things, despite if you are good, you get good marks, you are quite participative. But being outside in a hospital, being with somebody, being with doctors. Thus, by listening, by being inside a field a bit more professional is where you learn more. It will be good that maybe universities can be more practical than theoretical, that would be awesome.

She also believed in engaging patients with healthy practices of her own, but said that most dieticians did the opposite:

> Valeria (dietician): […] Patients think nutrition is quite expensive and that all the time is lettuce, and salad and stuff, and then no, I try to transmit them my habits. […] because patients… it is quite normal that a dietician gives you, (she shows a paper sheet) 'this is your diet' then that is to say 'I usually don't eat this, so how do you want me to eat it? I've never tasted this ingredient; how will you implement this to me?' I feel it is a common mistake.

Although dieticians learn about dietetics and nutrition, when it comes to applying this, they stated they did not feel sufficiently confident. They expressed their wishes to practise more, applying their knowledge. Several examples of how dieticians applied their knowledge in a positive way emerged: one dietician used it to gain muscle mass when he was "depleted" and afterwards recommended what worked for him; another dietician counted foods she ate in order to improve her strategies for DA. Only one dietician mentioned that she would not prioritise the recommendations of food preparations she disliked, which indeed is relating her own practices with the ones that their patients have. Since dieticians have received specific knowledge, they have been applying it for themselves, linking what they learn with what they do and, more generally, trying to use this in a helpful way for their patients. However, this often requires HS to show authoritarian attitudes and can generate power imbalances and deterministic views on how to address DA with patients.

The conflict of one's own constraints vs what the social environment expects was reflected in two experiences that HS narrated. Lisa, a medical student, was reluctant to disclose her condition in front of her peers, which is reasonable due to her NRD (Browne et al., 2016). This was shown particularly when she was drinking water but borrowed an empty beer can

[14] General expression of surprise, annoyance or exasperation. https://www.urbandictionary.com/define.php?term=hijole

from a friend to pretend that she was indeed drinking beer. The identity ambivalence that happens when being stigmatised (Goffman, 1997) happened in her case, who had the experience of witnessing dialysis in patients, and this made her more empathetic and realistic about her NRD. On the other hand, she had attended parties with peers and friends with a need for belonging to these non-stigmatised groups. Although she considers herself to be supported by her friends who showed her a dialysis room, she also wanted to belong to these other social rules from her non-friends (but peers still). A nurse who also had an NRD demonstrated another consequence of stigma in the form of low or non-adherence as well as denial since she stressed how she had appointments with the dietician and kept missing them; she had all the support she could need but she did not want to use it. Moreover, she transmitted both this shame and authoritarian attitudes to their family as they suffered from NRDs as well.

6.5 Summary

In sum, this chapter describes how there seems to exist open acceptance of unhealthy practices (affecting health behaviours and foodways) amongst HS, especially in the case of medics. It also appears that almost all HS disregard patients´ attitudes and experiences when providing DA; however, this was not the case for dieticians, who took on board various patients' experiences for their own life or for other patients. Despite this or perhaps because of this, HS have experienced unhealthy behaviours and nutrition-related diseases themselves or with their families and this has led them to apply what they think would be healthy advice according to their lay and professional knowledge. This is not to say that they do not still complain and very often reject patients' lay knowledge. Although HS mentioned various struggles (in which their academic life was highlighted) that limit their chances to be healthier, some others did accept that they have enough tools to adhere (and promote adherence) to a healthy lifestyle and therefore choose healthier food. With a general lack of congruence and in addition to a slight cynicism (depending on the profession) for this inescapable reality, these HS are about to become professionals who will need to deal with patients´ diet, reluctance, and lay knowledge. The next chapter presents the full visual story telling of the findings (table 7-1), in which all the empirical chapters, with their meta-themes and categories, formed the basis of a theoretical framework to explain the underlying mechanisms of the influence of HS's foodways on DA.

Chapter 7 Discussion

"We allowed the nutrition experts […], to shake our confidence in our common sense, tradition, the testimony of our senses and the wisdom of our mothers and grandmothers"
(Pollan, 2008;12)

7.1 Introduction

In the previous chapters, the thematic analysis framed by critical realism (CR) was shown. Causal mechanisms are a combination of empirical data and theories. They interact with each other. Learning about the causal mechanisms helps confirm or challenge theories; in this way, it not only explains the world but also seeks to change it (Alvesson & Skoldberg, 2009). This chapter unpacks the causal mechanisms that underlie the relationship between foodways and DA. This chapter, therefore, presents the discussion of the five main categories that were obtained from the seven emerging themes and subthemes. From the findings chapters, it was revealed that HS foodways are influenced not only by their social and cultural circumstances but also, and perhaps in various different ways, by their own emotions, mental states and stereotyped views on what healthcare professionals 'should' eat.

The different influences overlap to a certain extent depending on the environment in which HS are. In this sense, the columns of the table 7-1 show the categories that integrated various thematic areas and the rows show these thematic areas that included several themes. The result of carefully weaved through themes, thematic areas and categories was a framework (see table 7-1) that demonstrates a way of bringing the empirical findings with the theory. The recurrent themes were identified and tracked through the findings chapters, thereby summarising the findings and putting these into categories. There are various theories that surround these categories which are explained in this chapter. Some of the thematic areas, however, were alluding to two different categories, incorporating these elements to emerge as underlying causal mechanisms of the research relationship.

The process of analysing themes, framed by critical realism, helped the broader categories to emerge. When linking my theoretical underpinnings together with my empirical data, an important framework seemed to inform almost all data. Its close relation with DA fits it within a health context, in which future health practitioners learn and educate; it also underpins the main conclusions and implications for clinical practice of this research. This

framework is critical dietetics/nutrition (CD) (Biltekoff, 2012). The most evident link with CD is the relation between food and human health. Critical Dietetics encourages a rationalisation of the relationship of people with food, considering obesity's political and dominant discourses, rather than preserve their individualistic routes and philosophies (Brady et al., 2013). This vision then removes broader contexts that have the same if not more influence on food choice (Biltekoff, 2012). Diet has been deeply moralised and is viewed as a matter of personal capacity for will power, self-control, and avoidance of excess of foods, and so on. At the same time, pressures for consuming specific foods are triggered by the food industry but also by society. Various categories draw upon this problematic relationship between food and health, which involves gender issues, cultural systems, and strands of a food culture such as commensality and geography. This is why CD was the umbrella that supported various themes included in the mentioned categories.

The table 7-1 shows the final categories that emerged from the complex process of analysis and of integration of data with theory. This was the way of making sense of what is discussed in this chapter. Food culture was mostly considered from the Mexican gastronomic context standpoint rather than a cultural system that draws upon how people make sense of broader systems. This food culture seemed to be controversial when deciding what advice or recommendation to offer with regard to healthy eating.

Food culture was the foundation for gender as participants linked this within a Mexican food culture. Gender was another overarching category (Hagaman & Wutich, 2017) that framed an important part of HS foodways and some attitudes towards DA, however, this category was not expressed directly by participants (but rather after conducting the thematic analysis). Gender was not explicit but embedded in the perspectives of some participants, which has been internalised, as shown in the case of other categories. Although gender seemed to be less influential for DA-related themes, some gendered educational points of view were still evidenced, however it is noticeable that my participants did not critically reflect on this category.

The category of cultural system was related to most mechanisms influencing DA and was also associated with credibility. That is not to say that HS foodways were not related to this system since food healthiness or foodways' attributes were crucial when HS provided dietary information to patients but also when they needed to eat foods that by social representation, were healthy. However, HS showed an unexpected myriad of emotions attached to food and also emphasised the moral context.

Power is an important category as it contains all themes included in Chapter Six, which is about the different manifestations of congruence and incongruence. Some HS indicated how they wished to be credible; others, however, did not seem to care, showing cynical attitudes and a desire to separate the credibility of their DA from their own health behaviour, as well as exemplifying power imbalances with patients. Some institutions (healthcare system, education frameworks, food industry) promote hierarchies amongst patients/HS/HP and reproduce authoritative attitudes especially when it comes to placing the responsibility for patients' health directly on them as individuals, rather than on structural issues with a paternalistic approach. HS seemed to follow a model where patient lay knowledge, or the lack of health prevention culture, needed to be addressed not only by HS professional knowledge but also through HS physical appearance.

The category of professional identity emerged from the pressure that is placed on HS, either because of their socio-cultural environment or the healthcare and education context. The pressure to have healthy foodways (especially regarding quality, and time) shaped HS' lay knowledge and the way in which they integrated their professional knowledge. This knowledge needed to improve and be enhanced, integrating, for instance, concepts such as communication tools and psychology. That is not to say that perhaps HS also claimed to wish having a broader understanding of nutrition issues within their field. HS also learned ways to promote patient adherence irrespective of their own foodways (suggesting certain power issues and a consequent overlap with this category). Rather than adopting credible attitudes and behaviours, HS showed authoritarian and authoritative attitudes when promoting health, and this was one of the points of intersection with the category of power.

After explaining these categories and how they are intertwined across categories and themes, some salient intersection points within this framework can be illustrated. The themes of "only we know" and "building for credibility" draw on elements of power and professional identity. These two categories held tensions with each other when elements such as attitudes, knowledge, and strategies to offer DA were negotiated according to power issues or to the identity that HS were forming. An obesogenic environment was related, not only with power but interacting within a cultural system, which is intimately related to CD, which frames the findings of this study. CD was a helpful tool to identify causal mechanisms that explain why and how this obesogenic environment has been discouraged or encouraged, depending on the institution or person discussing dietary health.

Table 7-1 Final result of the interrelation of thematic areas into categories

Thematic area / Categories	**Food culture & Commensality**	**Gender**	**Cultural system**	**Power & Status**	**Professional identity**
Under pressure	• Socio economic environment (time and money)	• Social environment regarding physical appearance • Employment	• Obesogenic environment (including media, food industry and social media)		• From healthcare education and context • Time for eating
In my place	• Geography of foodways • Mexican families´ traditions or customs	• Availability, taste and quality of food • (W) low feasibility to change patients' diet	• HS' family customs • Stereotyped views of HP/HS • Mexican unhealthy tendencies	• Freedom or control if being local/*foráneo*? • *Comadre* culture (HS powerless)	• Professional vs Mexican culture in patients (only *foráneas* nurses)
Gender	• W & M have distinctive roe in different foodways processes	Many aspects of both foodways and DA are framed by gender	• Morality embedded with foodways	• Physical and appearance and nutrition knowledge to adopt authoritarian attitudes	• Men defend supervisors' advice
Mixed emotions	• Emotional eating - commensality	• More shame on women and hints of eating disorders	• Moral concerns, dichotomies, contradictions • Emotions and health	• Moral connotations for patients' diet	• Overall health problems (as motivation and consequence of HS healthcare training)
Giving education, taking information	• Food social representations and healthiness	• (W) More planning of healthcare education (W) Include more nutrition training (M) refer to dietician	• Physical appearance can correct lay knowledge	• Lay knowledge (lack of health culture) • Looks and its impact	• Professional knowledge and its requirements/improvements
Only we know	• HS and HP as "food" and "eating" authorities	• Women viewed as carers of family regarding foodways	• Stigmatized attitudes from HS to patients	• Power imbalances between HS/HP • Authoritative attitudes	
Do as I say, not as I do	• Mexican gastronomic culture as a mechanism for non-adherence	• (M) emphasized professional responsibility (W) acknowledged contradictions	• Stereotyped views from patients to HS	• Unbelievable (do not see or act congruently)	• Factors preventing patients' adherence
Making an impression		• Reflections on HS food diaries differ amongst discipline and gender		• Lack of congruency	• Expectation from a role model
Building for credibility		• Woman recognized sociocultural background of patients to advise.		• Strategies and attitudes to provide advice	

In this chapter I start by discussing the categories by subsections, from general to particular, considering the lens in which it made sense to frame these categories, and which underpins most findings, CD. This provided a way of contextualising/understanding the culture of food and how this was being manifested through participants' speeches. The different themes generated for HS foodways fall into an umbrella of the category called the Food Culture and commensality, which in this section provides the rationale for explaining most findings on foodways but also some aspects related to DA. Along these lines, Gender is presented as a branch of Food Culture, as many times, HS views differed according to gender. After this, the category of Cultural System follows and includes some notes on food healthiness and social representations. Following this, the category of Power, hierarchies, and status is deeply connected with most of the categories and discusses imbalances in roles and expectations from HS no only to provide DA but also for HS foodways. Lastly, Professional Identity is explained in-depth with its elements and mechanisms.

7.2 Critical dietetics

The expansion of Nutrition as a healthcare discipline could have effects on for instance, less dependence on doctors (Lupton, 1997), by transmitting specialised knowledge through dieticians and nutritionists. Consequently, a stronger link between patients' foodways and their health can be encouraged, rather than assigning this function to medical practitioners, whose training does not include this specialised knowledge. Nonetheless, dieticians in this study still experienced anxiety surrounding issues that went beyond both biological and psychological domains; although in most instances they tried to find a psychological or biological rationale for patients' issues, it was clear that such approaches do not sufficiently cover the whole scope of factors affecting dietary health. Rather than reducing all causal mechanisms to the lack of psychology information, a broader cultural phenomenon seems to be in place here. Although training in psychology seems to be important, a socio-cultural explanation and psychosocial mechanisms explain in a wider way one of the causal mechanisms that answer the research questions. Although assigning specialist knowledge might allow a reaffirmation of the dieticians' role, empowering them as a consequence, this research shows that, actually, this is not necessarily the case, and other mechanisms such as healthcare systems and hierarchies, prevent this. This is discussed in more detail in later sections.

In many places, medicine and healthcare are wasting societal resources and becoming a threat to human wellbeing (Ioannidis, 2016). For instance, in current clinical practice, individuals from minorities' cultural groups are often erroneously categorised in the same biomedical group, although this approach has raised warnings and generated debate (Fujimura et al., 2008). It has been suggested that "Reducing food and diet to its biomedical effects removes individual foods from their broader contexts" (Biltekoff, 2012:182). Indeed, this research demonstrated that broader mechanisms were highly significant in defining how foodways influence DA. One of these mechanisms, which is also highlighted by CD, is food culture and the way in which people negotiate and embed their views, beliefs, and attitudes about food within a cultural system: in this case, deeply connected within Mexican culture.

7.3 Food culture and commensality

Food and diet pose a conflict (Nestle, 2013) but these are everyday matters for families and eating is a daily occurrence (Pollan, 2008). In this research, what students discussed about eating (and what they did not mention) was valuable in obtaining their views. Foodways also influence what is not done or not eaten (Cohn, 2016), yet peoples' foodways respond to a set of social norms within certain contextual mechanisms that influence and shape what is eaten, and how (Bertran, 2010). An illustration of this considers how CR stresses the importance of context. Food culture includes institutionalised practices (Elder Vass, 2012), whereby the family is considered an institution as well (Bourdieu, 2001). Both objective and subjective cultural manifestations are shown in this research; however, a fundamental feature of culture is how these practices are shared (Elder Vass, 2012). In Mexico, culture is expressed partly through language contained in songs that are related to food, diet, and health, and through stereotypical views towards people who are overweight, obese or who have other nutrition-related diseases (NRDs). The song called "Colesterol" from Fito Olivares is a good example as it expresses food perceptions and "orders" from a doctor to a patient with high cholesterol levels. In the case of this research, food culture was implicated, in this case as food commensality, with a sense of community when sharing time for eating (Pilcher, 2005). Eating out was reported broadly as a "good feeling", and various participants described widely how they ate with friends and family in their food diaries and in interviews. Such social benefits, that can also be related to commensality (Bertran, 2018), were evidenced by most of the students who ate out.

One of the research questions related to the mechanisms that surrounded HS' decisions for eating. This research showed that broader structures influence HS' own foodways as well as

DA. Within the extrinsic factors that can potentially affect food preferences are environmental circumstances, advertisement, and time and seasonal variations (Ashwell, 1990). With regard to time available to eat, purchase and prepare foods, this was determined by HS curricula and personal circumstances (i.e. whether they were locals or *foráneos*). Time was not only a barrier in terms of food acquisition but also in having time to have a "healthy" diet (Mulvaney-Day, 2012). In other studies, the constant shift changes prevented nurses from having a healthy diet (Blake & Harrison, 2013). There were some similarities with what HS believed to be healthy food with a different study and with the poor application of the little knowledge they had in their own lives (Cardoso, 2018), although having knowledge did not always guarantee its application in HS' own lives (Crowley, 2014).

The availability of foods in this research was also determined by the proximity to food outlets that had affordable prices. Nonetheless, it has already been stressed how a strong presence of the food industry is partly what makes packaged foods and fast food highly available. This often optimises time and is less costly than other types of food (Nestle, 2013). Since *foráneos* did not have available support to prepare or plan their foodways, they chose whatever was cheaper, faster and more readily available. In their priorities, food healthiness did not seem to be included. However, for patients, according to participants, convenience shops in rural areas and small grocery shops are preferred. There has been an expansion of *Fondas* and *cocinas económicas* since 1989; additionally, fast food is the sector that has grown the most and will continue growing above 3% per annum (Rivera-Dommarco et al., 2018), which supports the importance that these settings have in Mexican food culture.

Nurses were the participants who expressed more ideas about how this culture can be related to the broad lay knowledge that they also showed on food and diet, as well as about the constant tension that most of them showed integrating lay with professional knowledge. HP have failed to consider cultural diversity as well as cultural relevance for their patients (Kim, 2016). On the other hand, some evidence points to the fact that HP do communicate with their patients about culture and, if possible, try involving themselves in this culture dynamic to make their advice relevant (Colby, 2013).

Socioeconomic constraints led to some students having to take additional employment and this also shaped foodways as well as monetary income. Despite the socioeconomic status, SES was not asked, differences amongst private and public universities might be the reason for the heterogeneity between at least the two groups of dieticians studying at different cities and universities. It looks as though HS' precarious situations or conditions were

compensated with food; in a way, they were looking at food for comfort, relief, or shelter. On the other hand, there is evidence that people in Mexico adapt their foodways to find foods that are filling (rather than nutritious) at an affordable price (Bertran, 2016). In addition to the impact that SES has on health (Porter, 2019), in this research, money income and food price were strong determinants of foodways (and of DA to a lesser extent), which is similar to anthropologists and health researchers' findings in Mexico whereby SES influences the cultural meanings of alimentación (Bertran & Arroyo, 2006). Nonetheless, very few HS recognised how socioeconomic problems were an underlying mechanism of the diet that HS tried to discourage in their patients, thus failing on acknowledging that this type of constraints are drivers of poor health (Porter, 2019). discussion about gender is discussed next.

7.4 Gender

Culture framed HS morality and some foodways constraints. Although unhealthy habits have been reported in medical students before (Keteelar, 2014), very few reasons were explained. In the present research, females who wanted to lose weight were more aware than males of changes they needed to make (and were also subjected to various social pressures to eat healthily) in their diet. The most mentioned strategy was cognitive restraint, which is a "conscious restriction of food intake in order to control body weight or to promote weight loss" (De Lauzon-Guilain et al., 2009:173). Additionally, females held more stereotyped views and expressed more feelings of shame than men when eating unhealthily. Increased frustration has been reported with more failed attempts to diet and lose weight (Vigarello, 2013), especially in women (Counihan & Kaplan, 2003). Although HS were still working their way through these pressures, they seemed to be conscious that healthcare or education systems and associated rules need improvement or further considerations, and actually, a few of them seemed to resist to what should be the rule.

Additionally, rules for eating did not seem to be foregrounded but were part of their moral connotations and social life. Having a fit or "healthy" physical appearance can be an extrinsic goal for women who need social approval for their own sense of self-worth, and this has been linked with higher dissatisfaction with their bodies (Guertin et al., 2017). It seemed that women in this study were anxious to eat what is socially accepted, not only because that would make them look good but also to offer a "healthy" image to their family and patients. In order to lose weight, women were more willing to adapt their foodways to what would be expected from them. In the current view of the medical model, a slim body

has been often related to a healthy life (Breadsworth & Keil, 2002). Interestingly, the only cases of a reported chronic NRD were mentioned by women; and for some, this was an extra explanation for their rationale to be healthy.

Gender differences in dieting practices and healthy food choices in women happen regardless of culture or nationality (Wardle et al., 2004). This type of pressure may influence their general self-determination, which is related to their identity (Guartin et al., 2016). Interestingly, in this research, and perhaps aligned with the latter idea, males expressed some strategies to avoid social pressure. Men apparently negotiate their identity within an anti-obesity culture (Gough & Flanders, 2009), but further studies about this negotiation, especially within health professions, are necessary. Although some considerations were made by HS, there was some tendency to avoid accepting incongruent attitudes among HS and/or HP. One study (Perlstein, 2017) in the empirical literature stated that doctors should reflect on their own lifestyle behaviours and on barriers (such as gender, for this research) that they face to utilise all the knowledge provided by their current training curriculum. It can also be the case that there is a cultural fatalism[15] (Davison et al., 1992) with regards to patients' personal constraints to eat healthy or to adhere to HS recommendations.

When offering DA, female medics had more discussions around patients' cultural backgrounds at consultations, which was linked to the role women have on all foodways processes, but also with the place in which they were raised originally, which is often not the same city in which they studied. Being a woman has been positively associated with offering DA previously (Frank, 2007; Spencer, 2006). Perhaps, given the marked sexual division of labour women reported, they needed to consider further issues with patients as a way of tackling barriers that have allowed gender inequalities to continue reproducing (McKimm et al., 2015) both across and within the profession (Allen, 1998) and when dealing with patients.

Regarding healthcare training, males were more focused on explaining practices - almost reproducing what their supervisors and educators had taught them (Castro, 2014) - such as referring patients to dieticians rather than dealing with patients' dietary issues themselves. In this way, they are not trying to substitute what is traditionally performed by dieticians, or more specifically, a vertical substitution can be happening, however, some power imbalances are at work here as well (Nancarrow et al., 2005). Different expectations of educational systems between males and females have been documented more broadly (Archer, 2005).

[15] This concept refers to people perceiving that their healthcare is not under their control and there is few or nothing they can do about it, despite that health might be of a great importance on people's lives (Davison et al., 1992)

There have been various critiques on how the medical profession is a patriarchal[16] institution and dominated by a western view (Harding, 1991) that seeks control over women, for instance through pregnancy and birth control (Lupton, 1997). Following Foucault, knowledge is another way to have social control; this explains also why HS indicated they could distance or differentiate from patients or from other professions or hierarchies in their same profession (White, 2016). There is a contrasting view however, that points out how the professional advice in healthcare has shifted from a controlling one to an enabler one where the patient is guided through their own experience to an understating of their own health conditions (Abbot & Meerabeu, 1998). A number of different institutions (and not only healthcare systems) from structural influences seem to regulate people's conduct and behaviour, but this may not be related to power itself (Rose et al., 2006). Some Mexican authors have reported that discrimination by gender can lead to loss of confidence amongst medical students (Consejo & Trevino, 2005), however, this cannot explain the findings in this study thoroughly. Acknowledging the powers of a social organisation such as educational systems serves to understand how agents interact with these structures (Archer & Elder-Vass, 2012), and gendered views or actions from these institutions determine not only education but DA at some level.

Gender issues in the Mexican educational environment have been documented to be aligned with hierarchies and marked gender roles (Castro, 2014), as shown above. Foucault argues that most people will try following societal rules irrespective of gender (White, 2016). However, gender differences can emerge from social institutions (Archer, 2005) and, as discussed, family, educational systems and culture play a role here. Food culture can include views about health and diet, but internally people (sometimes unconsciously) attach meanings to foods they eat, and this can at the same time be adapted to group environments. Although all of this can be manifested externally but embedded internally (Bertran, 2010), there was hardly any discourse that showed an internal battle to select the type of food, time, companions, and others. Foodways seemed to be taken for granted and not reflected upon, though interviews worked for HS to think about their own foodways. Instead, HS seemed to negotiate their views, hence adapting their understanding of norms to their practices (Archer & Elder-Vass, 2012) for offering DA. There has been an overemphasis on having a value-free objectivity (Harding, 1991). A focus in knowledge-based professions has increased since there are new demands for healthcare models (Birgit, 2003). Yet, the perspectives of the world have been mostly constructed by men (Harding, 1991). It has been documented how nurses, for instance, prefer to undertake some type of work that would belong to doctors

[16] Patriarchy, although a contested term, has been used broadly "to refer gender relations in which men are dominant and women subordinate" (Witz, 2013:3)

just to avoid negotiating this with them (Allen, 1998). However, professional identities should develop considering gender inequalities and avoiding women's devaluation (Birgit, 2003). A feminist perspective to knowledge claims that most scientific beliefs are socially situated. The person who would make a call for objectivity or the "qualified" expert systematically excludes minorities such as women (Harding, 1991). Medical and healthcare professions are undergoing a restructuring, and some argue that the medical profession is defining society's healthcare needs (Birgit, 2003).

An aspect deeply related to food culture, especially in this research, and with gender in some cases, was a cultural system manifested through actions, words, attitudes, and beliefs. This category is presented and discussed in the next subsection.

7.5 Cultural system

Cultural systems are open as these are social systems which include politics, economy, and science, but these systems also allow an exchange with a physical environment. Although there is certain cultural autonomy and there is a difference with other social domains (Jacobs, 2016), every cultural system has a complex structure that functions in different ways. One of the elements of a cultural system can be values, which can influence conduct and goals through attitudes, and these latter are targeting more specific situations and contain a motivation (conscious or not), which in the case of food, is called intention (Honkanen et al., 2006). In this sense, and related to the Mexican context, a cultural system was evident through many of the participants' responses. HS seemed to be constantly reconstituting culture and making sense of it, which adopts the form of cultural system (Archer & Elder-Vass, 2012), and this category is presented in this section.

7.5.1 Predominant scene

There was an emphasis from dieticians and medics on stigmatising views about the food-health relationship. Interestingly with dieticians, this was expressed with social representations of food. In the case of medics, they reported feeling judged, and, in turn, they judged other professionals, especially those with a NRD. HS also tried to ratify their beliefs with anyone they advise on diet. If HS disregard patients' cultural systems, despite using their own cultural system (along with attitudes) to advise, it means that HS are wielding their agency (Archer & Elder-Vass, 2012). These attitudes and their belief systems, however, are explored in a later section. Knowledge is a variety of beliefs attached to individuals, and the

acceptance of this as valid or as scientific (or *true* belief) has a greater social context influence (Elder-Vass, 2012). Additionally, knowledge can emerge from a cultural system and therefore has a social nature (Al-Moudi, 2007).

This research showed that HS rejected patient lay knowledge on diet and alimentación, however at some level, HS integrated their own lay knowledge to counsel. This is an effect of the contemporary scientific approach to medicine and healthcare (Lupton, 1997). Perhaps because this lay knowledge was reinforced by their developing professional knowledge, which entails a dominant view on food-health (Martinez, 2013), they understood this as a valid knowledge. It can also be the case that clients, or in this case patients, are socially distanced from those who hold certain educational background (Abbot & Meerabeau, 1998), for instance, HP. Considering my professional background, when interviewing HS, I was able to differentiate from information included in the official dietary guidelines (professional), however, HS expressed on various occasions that they obtained some nutrition information from people unrelated with their professional training and very often they did not corroborate this when being trained. Knowledge, therefore, is a social construction by the agent to which it refers but it also entails a relationship with the way the world is (Al-Moudi, 2007). HS understanding of the world comes for both their professional training and their non-professional socialisation. As agents, they therefore negotiate their way through their own personal histories within broader contexts and educational processes.

According to HS, patients' beliefs of how HP should act or behave and respond, emerged and are reproduced from their culture and value system (Elder-Vas, 2012). Indeed, most research in health behaviour is focused on the different ways in which patients are non-compliant, minimising influences that health professionals can have, how medicine can be poorly applied (White, 2016), or how more medicine very often means less health (Ioannidis, 2016). There is also a dismissal of the professional's commitment to unveil the contextual values that influence his/her knowledge (Elder-Vass, 2012). Furthermore, HS seemed to be unaware of or had deeply internalised the different ways in which they were being guided by their own cultural system to counsel patients. This internalisation affected their ability to be reflective and critical. Broadly speaking, HS who are more reflective tend to get a sense of professional identity sooner than students who do not have that level of reflexivity (Nairn et al., 2012). In medics, there was resistance to being critical about situations that surround them, as if they have a slightly cynical view or approach to education. Some authors have reported an explicit arrogance in Mexican medical students (Castro, 2014; Phinder-Puente, 2014) and maybe women had a more critical view, as explained in the gender section.

Regarding how HS expressed this cultural system through various interactions with their environment, the most salient aspects were manifested when they had to counsel on diet and this is discussed in the next subsection.

7.5.1.1 Cultural recognition when advising

HS expressed their set of cultural beliefs and attitudes throughout interviews when discussing their roles as future HP but also when stating an uncomfortable relationship between their own health practices and their foodways. Regarding their role as future HP, HS relationships with patients seemed to be stigmatised as here was the presence of blame, rejection, and stereotype (Browne et al., 2016) within the healthcare setting, and more often within HS social and family environment. Some participants alluded to witnessing how other professionals had stigmatised patients. A stigma is an "attribute that makes a person different from others in a social category and it reduces the person to a tainted or discounted status" (Goffman, 1997:133). Considering on the other hand the HS relationship with health and food, there are some psychosocial mechanisms that occur during stigma (and that revealed this theme by various HS) that appeared to have a role here, for instance, shame and blames for eating unhealthy or being overweight and showing this in their looks (especially dieticians).

HS stated that they felt stigmatised, to some extent, from different sources. The moral connotations of obesity perceptions as well as food "status" have gained more and more importance in society (Bertran, 2010). Stigmatising attitudes were abundant towards people with obesity since before the twentieth century; not only was it about being humiliated but also about being deprived of happiness (Vigarello, 2013). Although the dominant construction has been to call unhealthy patients "immoral", these views have been challenged (Gough & Flanders, 2009). HS social context when training (mostly family and peers but also teachers and other professionals) stigmatised them in various ways. At least a couple of participants of each discipline expressed this using the words "judgments" or "opinions", in the following ways: being judged and labelled with some stigmatising attributes such as "fat" or "cranky" nurse, "incapable" dietician and "careless" medic. Participants with a NRD experienced social restrictions when sharing food with others (family and friends). Consequently, social influences were mentioned as a rationale for unhealthy behaviours with regard to alimentación and lifestyle. This somehow affected how they formed their professional identity, and this is discussed later in this chapter. Additionally, some consequences of stigmatising attitudes towards HS were described

feelings of low self-worth, anxiety and distress, self-blame and low self-esteem, and for those who had a NRD a suboptimal level of self-care was evident.

The traditional values of the medical profession shape medics as well as other healthcare professions; however, some experiences are not obvious for those studying these types of professions (Luke, 2007). A medic reported that a doctor's way to counsel patients on diet is by pointing out physical or visual evidence that they are close to having one or various NDR. The consequences in this sense are lived from both sides since HS (mostly the ones that reported mental health concerns or NRD, but also others) have reported blame and distress when interacting with peers or supervisors and they reported that patients feel low self-efficacy, worries, and some other negative feelings. To this end, they proposed some mitigating strategies to avoid spreading these stereotypical views regarding society, patients or health professionals. Education and cultural awareness were suggested by some of them and only a couple of participants proposed social marketing, social support, and health-promoting with a focus on avoiding stereotypical views. Some empirical literature, however, shows that it is more relevant to tackle these stereotypes through clinical interaction (Persky, 2011) since the negative consequences of holding biases against obesity have been documented in specialty doctors (Kadar & Thompson, 2018). Nonetheless, even prestigious research journals reproduce a biased view towards people with overweight and obesity, for instance when the *Lancet* published a report that linked ultra-fast food with obesity, reproducing, therefore, the belief that obesity is caused by excessive consumption of food (Dennett, 2019). Although HS's educational context confers upon them more training to address obesity issues, at least in nurses and dieticians, a negative bias towards obesity seems deep-rooted (Budd et al., 2011), although they do not explain in which ways. As long as reputable research sources and healthcare curricula, especially in dieticians (Dwyer, 2016) keep reproducing biases towards people with obesity, this would continue to be seen as a pathological individual behaviour (Dennet, 2019).

Foucauldian perspectives (Foucalt, 2002:1982) were useful in various aspects of this discussion to draw upon the different discourses that emerged from the various processes that surrounded HS and that answer the research questions. This is because talking about influences is talking about certain aspects that are more powerful than others. To talk about DA is to talk about the knowledge that DA entails, and knowledge is an element that Foucault considers as a source of power and influence. To experience the world through a cultural system does not necessarily imply the use of language, but language certainly has a powerful effect. Certain structures such as universities where HS learn and adopt an identity (negotiating at the same time with their own culture) have rooted a discourse of power that

Foucault acknowledges. Since Foucault also takes into account the context in which this is developed (Nairn et al., 2012), his views were particularly useful when working with a critical realist perspective as a lens. For now, however, one essential aspect in which HS manifested their cultural system was when they provided counsel on diet, and this brought certain expectations that will be discussed next.

7.5.2 Constraints vs Expectations

One of the research questions that not only emerged from the literature but also from the interviews was about role modelling. In this sense, according to HS, an important expectation from their teachers, instructors, patients, and families is that they should be role models for health. This affected the way in which HS interacted with all of the above mentioned, but also it affected HS's own cultural system. Some beliefs belonging to this system were shown through authoritarian attitudes such as telling patients off and stating Mexicans were "lazy", or nurses were "careless", or people lacked an alimentación culture. Authoritarian attitudes have been shown before for medical students (Rose, 2011). The current medical model indeed allows HP to dictate how patients should or are behaving (Lupton, 1997). Although some students recognised that a consequence of this was the lack of adherence, most HS took for granted that patients did not adhere for a number of reasons and that they, as future HP, needed psychological or communication tools to convince patients. Foucault provides tools to show how medical knowledge is always present but is carefully worked out (Lupton, 1997) to disempower patients and empower HS. This is why HS seek to control patients who "fail" to fit into guidelines for weight and physical measurements, through medicine (Lupton, 1997), hence HS' anxiety (Abbots & Lavis, 2016). This power, however, can act as another way of maintaining certain attitudes around being overweight (given their physical appearance), which is believed to be caused by patients' lack of control or will power. People labelled as such can recourse to food for comfort or rebellion (Abbots & Lavis, 2016).

HS morality is the thread that pulls together almost any type of advice on diet, whether due to stereotyped views on eating or due to their stigmatising attitudes towards patients. Although some participants acknowledged that eating choices are determined by social aspects such as economy, employment, and time constraints, Cohn (in Abbots & Lavis, 2016) argues that health policies still consider that eating is determined by individual behaviours or particular choice. A moral eater is someone "who accepts medical authority and interpolates this authority into personal efforts to attain thinness" (Cohn, 2016:93). HS

put a moral connotation on food because they have already internalised this in response to how their cultural system – as future health professionals - is affected. For instance, some disgust or dislike reactions are culturally determined, not only influenced by physiological mechanisms, and can have moral reactions on this (Gofton, 1990). HS with a NRD go against their cultural norms of eating sweets at classes or Mexican fatty food when being back home. Some of them interact with this norm by finding solutions for excessive food consumption and at the same time have difficulties in going against their norms (e.g. medic and dentists). Two medics and at least three dieticians announced frustration or feelings of low-self-worth for not doing what they themselves recommended to others. Conflicting feelings were expressed through what they ate and the food they shared. For CR, a structured context has an influence on the way people behave and in the way in which they follow certain meanings and norms. My research then adds to what others did not obtain, which are some coping strategies to stigmatising attitudes (Texeira & Budd, 2010). HS from all healthcare disciplines used emotional eating to cope with attitudes and beliefs that were assigned to them by their social context. When being far from home, the willingness to behave differently (even to rebel) increases. Subjects then are outside of a clinical environment where they have a certain reputation, and then act according to a different reputation around their peers (Goffman, 1963). In the case of HS who found relief and freedom in distance, some also struggled as there was an expectation that they would be responsible "enough" to maintain healthy habits as part of their lifestyle, organise their budget, comply with curricular demands and be responsible with their own foodways (Bak-Sosnowska & Skrzypulec-Plinta, 2017). Lifestyle has a great influence on eating habits and rules of food consumption, regardless of knowledge and information and of the apparent freedom that HS have (Bertran, 2010).

Some dieticians showed another consequence of their feelings of stigma by showing low confidence to advise, perhaps because they indicated they needed their practices to match with what they were trying to promote. It could also be that participants in this research were projecting stigma in their own lives. A slight cultural fatalism seems to drive these cases and the next section explains in which other ways manifested this.

7.5.3 Cultural fatalism

At least a couple of students mentioned the relevance of participating in the study and reporting "the truth" of what they ate, avoiding the temptation of making their food diary up. Indeed, their diaries might not be completely trusted as these HS themselves, were hesitant of the accuracy of their own reports. Interestingly, when discussing issues within a group,

HS did not recognise stigma, but only stereotypes. However, when being alone, some even self-flagellated due to shame or internal conflicts. In addition to these feelings, medics reported more emotional struggles than others, which might be the result of feeling stigmatised by their peers, teachers, and families. Aligned to this, emotional eating was reported as a stronger constraint compared to others. The family has been reported as a way through which medics cope with stress (Gómez-Delgado & Velázquez-Rodríguez, 2019), however, in this research, the family itself was a major source of anxiety and stress for most HS.

There were several stereotypical attitudes that were shown in this research due to a patient or professional being overweight or obese. Obese people have been considered weak since the eighteenth century, and some dietary suggestions discouraged sticky and oily food (Vigarello, 2013). Certainly, in Mexico, overall culture of fat and sugar avoidance has been reported (Bertran, 2010). Some decades ago, animal fat was named as an enemy. Its substitute was then hydrogenated oil but, currently, this is "bad" fat too (Pollan, 2008). Diet has been pointed as a conditioning factor for obesity, especially amongst upper socioeconomic classes (Vigarello, 2013). Before fatness (how obesity has also been named) was associated with poor health, it was considered a degradation, disorder and a result of unbalanced energy; yet, on a later date, the general belief is that fatness can be changed through diet and exercise (Brady et al., 2013). This would explain why patients think dieticians only know how to lose weight (through cognitive restraint). Some research, however, has shown how thinness is more dangerous for health than obesity (Biltekoff, 2012) but apparently, the current culture promotes more values of thinness over obesity.

In the eighteenth century, thinness was associated with putting one's life in order by eating a more balanced diet. Further, in the early 1930's there was a spike with an obsession with weight (loss), medics used numerous treatments with patients with obesity, and stigmatised obesity, which is considered a threat nowadays (Vigarello, 2013). However, the link between weight and health has been contested (Biltekoff, 2012, Gough & Flanders, 2009). Some argue that a moral panic is supported by manipulating statistics and spreading results from questionable research (Biltekoff, 2012). Some others say that the "obesity epidemic" has been used to attack the food industry (Gough & Flanders, 2009). However, this is also framed from an individual perspective, which is the same paradigm in which medical education is also considered (Menendez, 1998). Guidelines to advise on diet are constantly changing, which raises the question of how much advice is contested but still influential (Ioannidis, 2016) and why the current obesity epidemic has not been solved, but, if anything worsened (Pollan, 2008). People with obesity are marginalised and vilified (Biltekoff, 2012;

Ulijaszek & McLennan, 2016), hence individual strategies to tackle behavioural changes in people with obesity are widely spread to "benefit" them. Although culture has been a guide on what to eat (Pollan, 2008), HS seem to have embedded an ideology that rejects Mexican gastronomy and instead place stereotypes: on people with chronic diseases, for instance. If medical health interventions continue under an individual emphasis (Abbots & Lavis, 2016; Fox & Eagan, 2017), it might be challenging afterwards to try reconciling this with broader mechanisms such as politics of health. Economy shifts and global markets have influenced the increasing rates of obesity as well, however, information is manipulated by these structures and others such as governmental policies, to the extent of placing an individual responsibility for health (Cohn, 2016; Shin et al., 2013) and eating behaviours (Fox & Eagan, 2017).

Some socially accepted anti-fat attitudes have been shown especially by Mexican health providers on in the way of prejudices (Bertran, 2010). Additionally, stigmatising attitudes have been documented from Mexico City inhabitants, irrespective of their educational level or socio-economic status. Adjectives such as "poor", "ugly" and "lacking discipline" have been reported (Bertran, 2010), which is congruent with some of HS's views. People deemed obese might feel devalued and powerless, as well as discriminated against. They are often ashamed of their bodies (Gough & Flanders, 2009). A couple of participants highlighted the widely held belief that thinness is considered a synonym of health and happiness (Teixeira & Budd, 2010). If these anti-fat attitudes have an origin in a lay knowledge and cultural perceptions, it is clear that HS have embedded these attitudes. This at the same time seems justified as the current knowledge on diet is framed by a hegemonic view that condemns obesity (Dennet, 2019). This is not the case for dieticians, who supposedly receive a more holistic approach to understand the complexities of obesity. However, under a dominant view, food is divided into "good" and "bad", and "thoughtful" eating is promoted, although moral implications are embedded in this discourse (Biltekoff, 2012). Stigmatising dynamics such as this has proved to be unhelpful for physical and mental health (Shin et al., 2013).

In the relationship with patients, HS reported low adherence from patients without openly recognising these beliefs and attitudes towards them. Most HS reported that their patients always found a way of justifying themselves for eating unhealthily or using alternative medicine, mostly due to their experiences obtaining advice from their *comadres*, neighbours, and family. Very often due to this, a couple of HS assigned to their patients and identity as "Mexican people", who according to them lack willpower, and are characterised by laziness, self-blame for their weight and morally unstable. HS maintained that patients were wrong

and did not have a culture of education regarding healthy eating. In addition, dieticians stressed that patients were constantly looking for an easy and fast solution (which adds to the notion of laziness) to their long-time accumulated weight problems, which was not "right". Looking for "easy" solutions has been acknowledged before within a Latin-American context (Yates-Doer, 2013).

HS and patients are involved in a judgemental and stigmatising cycle because although they expressed feeling judged (and justified their own colleagues), they themselves also used some stereotyping attitudes when referring to patients (Browne et al., 2016). HS stated that their families and friends acted judgementally towards them and this was then influencing their foodways. It appeared to be the case that when patients did not see what they were expecting (a physically "healthy" professional), then they judged these HP. HS reported that patients judged them due to their lack of experience, knowledge or due to the hierarchy that patients believed HS to have among other members of the healthcare team. In any case, HS seemed willing to counsel about diet despite these prejudices. Stigmatisation normally occurs based on group social perceptions and this has been reported before in Mexican nurses when non-nursing undergraduates made fun of nursing students' submissive behaviours (Mata, 2016). Holding stigmas against certain cultures can exacerbate a tendency for judging and therefore, stereotyping views continue being reproduced (Shin et al., 2013).

A salient element that is a branch of a cultural system is the idea of social representations that HS described on foodways or specific foods per se. These are discussed below.

7.5.4 Social representations of food

A clearly negative view that most HS had on Mexican food was that although it was tasty, it was also greasy and unhealthy. Some authors acknowledge that tastiness can lead to excessive caloric consumption and therefore, becoming overweight seems to be associated with an overemphasis on a lack of will power and solely mechanism at work (Rivera-Dommarco et al., 2018). Healthy and tasty food, on the other hand, seem to have a double benefit for people, morally and nutritionally (Bertran, 2018). "Healthy", has constantly been associated with the sense of something "good" as well the other way around. Healthy people are categorised as healthy and have more ownership of their lives than those who eat unhealthy (Chen, 2016), which includes moral connotations. Not only do health providers say what is "best" to consume but family and media influences are involved (Schaefer, 2016). Evidently, for HS it was easier to blame a poor food culture for high availability of tasty foods and to blame their patients' lack of will power and self-control. If, on the other hand,

HS eat this, it is because of their demanding curricula (which was reported to trigger distress and anxiety) because they are *foráneos* (with low or no support for food preparations), or part-time employees (with a low income). Alkon (2013) reported a lack of income or the proximity to food outlets as the main barriers to purchase the preferred food. On the other hand, low support from one's family has been previously reported as a barrier to eating healthily in Latin American nursing students (Barraza & Ortiz, 2012). This information demonstrates that more social factors, rather than only a lack of self-control and so on, are involved in how people decide their foodways.

About social mechanisms that influenced food access for HS, most students and especially locals, preferred to access food in their homes, whether they were the ones preparing or because their families took care of purchasing and preparing food. Methods of food preparation shape gender roles and social hierarchies (Pilcher, 2005). Although it was reported that there was a wide availability of food in the streets and in slightly less at university, most students preferred their familiar taste (home-made food) or eating in small locals rather than at the university. This might be due to the fact that one university did not have any cafeteria, canteen or source of food vendors, another university had a cafeteria with a questionable reputation amongst HS, and the last university's cafeteria did not offer competitive prices and availability, according to HS. With regards to prices, an apparent commercial "freedom" has induced the Mexican population to eat less healthily (Moreno-Altamirano, 2018). Nonetheless, from 2015 a tax was introduced on fizzy drinks and other sugary foods (Calvillo & Szekely, 2018), with the intent of discouraging individuals from purchasing those. Additionally, consumers can potentially decrease because experts have started to discourage these foods' consumption; lay people might prefer not to eat them due to their low healthiness (Bucher, 2015). Some HS mentioned an obesogenic environment promoted by the food industry, which has also been documented largely in Mexico (Rivera-Dommarco et al., 2018) and in the US (Nestle, 2013). Perhaps since HS are trained under the current regulations, they hold strong views against an obesogenic environment as well as industrialised food marketing (Barquera, 2010). Marketing influences to some extent cultural norms, values, and beliefs, therefore affecting food acceptance (Booth & Sheperd, 1988). Within the Mexican context, rather than offering more information to patients who already know what type of diet is healthy or unhealthy for them (Kauffer, 2015; Snow et al., 2013), it is important to create strategies for HS to help patients transfer this knowledge into actions.

The section explained the category of culture system and presented the various ways in which HS use and integrate their own cultural system along with views and opinions from their patients. It highlighted the importance that judgments and biased beliefs have in

continuing to reproduce these stigmatising attitudes, and it has presented the most relevant findings as well as arguments that were similar or contrary to theories already documented. This is related to how HS integrate this cultural system while they are preparing to become health professionals. HS professional identity underpins the ways in which they adopt certain cultures, attitudes, apply their knowledge and respond to structures, and this category is explained in the last section, however, to understand the different ways in which HS considered themselves in relation to other professionals or other HS from different disciplines, some ideas on power and status, which actually underpin the negotiation of a professional identity, are explained next.

7.6 Power and status

According to Foucault (1982), power is meticulously worked out and exercised on people's bodies through knowledge that, in this case, is held by the healthcare professions. Medicine is an instrument to identify deviant subjects and secure adherence to the normal. In this sense, subjects are trained and therefore named (credentials are given) as professionals, in order to do so (Witz, 2013). According to Foucault's approach, however, power is manifested through promoting individuality, except that individuals disappear into discourse. Therefore, there is a tendency for them to lose agency. Foucault also separates communication and transmitting information from power by saying that meanings are not necessarily attached to power (Foucault, 1982). According to Fairclough (2010), power often becomes a force of coercion that acts through ideology or self-disciplining practices (with values and identities). Although HS agency was clear through their decisions (negotiating what was being told to them but also sustaining certain workplace practices), when HS counselled (Allen, 1998), a disempowerment by their context was also suggested. One element of this disempowerment is the power imbalances that arise between them and their superiors and other professional disciplines, and the other is their educational framework that leaves patients helpless (Lupton, 1997), disempowering both parties (patient and professional) to some extent.

From a Foucauldian perspective, knowledge is seen as a powerful dogma in medical consciousness and is exercised with an authoritarian gaze (Coburn, 1999; Foucault, 2002). This can be executed by establishing a socially approved person that validates the scientific knowledge (Elder-Vass, 2012), in this case, how HP counsel on diet. There seems to be a control discourse to catalogue an obese body as medically deviant and morally deficient, and medical institutions then repress these types of people (Foucault, 1972). Patients resist this control, (Lupton, 1997) for instance through a lack of adherence. Additionally, social control was sought in Mexico by attempting to universalise, through nutrition and dietetics sciences,

the Mexican alimentación to occident practices, since many years ago (Pio, 2013), however, patients do not necessarily accept passively all orders (Lupton, 1997).

Some HS recognised that patients very often did not listen to them. HS were relying upon their professional knowledge with some customary or authoritative attitudes (Foucault, 1984), to disregard patients' lay knowledge and perhaps this was reproduced from something similar observed from their teachers or at medical institutions. Normal (rather than healthy) human beings have a standard functioning in their bodies (Foucault, 1974). From this point of view, anatomical and physiological knowledge is essential for medics. Nonetheless, a preponderant attitude is shown in HS, especially in medics. Perhaps they believe they are immune to diseases by holding the knowledge of how to address this with others, which was noted by a couple of them.

7.6.1 Status

Medicine has a higher status than other healthcare professions (Timmons & East, 2011); and nursing has been reported as a subordinate profession, despite nurses' holistic approach (Nairn et al., 2012) and notwithstanding that they deal with most managerial and operational aspects of patient care (Allen, 1998; White, 2016). In the sociology of professions, nursing has been considered a semi profession that has technical skills and is not based on fundamental studies, such as medicine (Abbot & Meerabeu, 1998). Perhaps this kind of idea has been reproduced within nurses' education and training. Furthermore, this might explain why they chose to answer any question, even when they were unsure of the "veracity" of this information. Medics on the other side, avoided advising when practising and said that they were not allowed. However, that is not to say medics are building experiences and responsibility for their actions (Becker et al., 1961). Since training is a product of historical practices and professional cultures and identities, perhaps each way of engagement with patients is valid within HS's own disciplinary focus. One example of this is how, historically, medical education is demanding, and students feel constantly supervised, and challenged for information (Castro, 2014). However, throughout their interviews, HS showed certain constrained morals and values, and their gained knowledge and skills seemed to be basic to forming their identity. This knowledge included what they were capable of doing instead of what they were expected to do as a definition of their role. It appears that they were reproducing this power dynamic between them and their supervisors because they did not feel they could challenge or question them, hence they believed that patients cannot question instructions either.

Most nurses reported patients had stereotypical views on professional nurses (as fat and cranky) and maybe a response to this was holding this hierarchal power over patients, translated into telling them off. However, this consequence translated into their own practices could be emotional eating. In this way, they intrinsically and extrinsically respond to these stereotypes. Interestingly, medics seemed to have a higher sense of affiliation amongst their own role and also towards their supervisors, who belonged to the same profession. Nurses, on the other hand, recognised this social distinction between students and professional nurses, and this hierarchical location also defined their identity since they saw themselves as more comprehensive and empathetic to their professional colleagues.

For dieticians, the hierarchical positions seemed unfair for their identity since patients were more likely to believe a doctor than to give credit to them. A few non-dietician students agreed with patients' views regarding dieticians' role, arguing that they told patients off and that diets were restrained, narrowed, and made repetitive, unfeasible and non-filling. A couple of dieticians reported that patients seemed to believe that dieting (through cognitive restraint) is an easy process for which they could use products to lose weight, an idea that has been encouraged by these products' marketing. Additionally, dieticians needed to show (as well as some doctors), mostly through a fit physical appearance and by eating only socially accepted "healthy" foods, that they, therefore, met patients' and society's expectations. HS keep reproducing stereotypical views on how a "good" professional will look like (thin and presentable) and what they should know about patients' gain. Social sciences have shown that physical appearance is what some medical services promote as a healthy silhouette and body (Diaz-Mendez, 2014). What was interesting about dieticians is that they were keen to hold a polite and empathetic relationship with patients to try eliminating the stereotyped view that dieticians must be thin. Furthermore, some seemed willing and open to share their lived experiences, but always bearing in mind their professional boundaries. This latter is linked to congruence and power imbalances between HS and patients.

Congruency in healthcare professions, especially medical, was not shown or there were various contrasting cases regarding applying their professional knowledge in their own lifestyle practices or foodways, which is aligned with previous research that points to a low disposition to follow dietary national guidelines (DNG) themselves (Black et al., 2012). Nonetheless, other authors have shown that when innovative courses or lectures are offered to HS, they decrease the consumption of certain unhealthy nutrients (Conroy, 2004) or unhealthy foods (Crowley, 2014). Although in this research there was a slight critical reflection, more than half of HS openly accepted incongruence not only amongst them but

(and especially) also across health professionals. Yet they did not seem willing to change this. Dieticians, on the other hand, were more realistic about (and offered tailored DA for) patients' circumstances, by relating them to their own constraints, which matches what Thomas (2006) discussed about physiotherapists that encouraged more healthy eating when they themselves made healthy choices. However, when specifically discussing congruency, most HS hesitated (especially in FG dynamic) and only considered that they would not be credible if they had some serious nutrition or dietary issues that would prevent them from showing a healthy (physical) image when offering DA. Other studies have shown a higher sense of credibility when HS had healthy food habits (Spencer, 2006) and some authors found that there is a low impact on patients' health when there is low perceived credibility of HS (Blake & Harrison, 2013; Yu, 2015). Additionally, a positive correlation between a healthy diet measured with quantitative scales, and positive attitudes towards advising on diet have been evidenced before (Ammerman, 1993; Yu, 2015) but opposite cases have been documented (Ketelaar, 2014) especially given that food choices' assessments vary across research.

Some believed that patients could eat more freely than them, arguing that the social representations HS were expected to have, if and when they eat in front of patients (healthy) and this was linked to the potential credibility. Clearly, they are going back and forth between their identity as dieticians and their life outside their professional life. Only a few medics interviewed individually stated they wished they could relate their healthy foodways to the (healthy) advice they offer, and when this was not the case, most blamed their environment. Nurses were aware that they used some of their own eating and foodways strategies. Therefore, a reluctance to follow healthy guidelines was shown through this. Perhaps HS have this preconceived idea that being "good" health professionals means eating healthy. Another way in which nurses showed acceptable behaviour, was provided by a nurse that made up stories to convince their patients to be healthy. Being congruent with a healthy image and practices, which is the most common social representation of a health provider, did not seem to resonate with HS but it did highlight hints of shame, pressure, and some strategies to cope with this. And although they hold a status conferred by their professional credentials, HS still needed to show, constantly and consistently, that they practised (or tried hard to practise) what they preached in order to maintain this status.

An important structure which influenced the type of advice given was the healthcare system, which according to some, has a curative, objective and individualised focus (Cohn, 2016; Lupton, 1997; Menendez, 1998) along with some hierarchical issues, translated into power imbalances (developed in the following section). People have normally been encouraged to

change their behaviours by a paternalistic approach that normally underpins most health policies (Abbots & Lavis, 2016) but also healthcare within an institutional model (Cody, 2003). Indeed some key studies draw upon Prochaska's stages of change based on motivational interviewing.

HS are subject to traditional forms of academic discourses, which include an impersonal style of addressing the discipline. Organisational constraints are consequently produced through discourse on learners; therefore, this will have an impact on their identity (Fairclough, 2010). Moreover, horizontal or vertical substitutions can alter professional boundaries (Nancarrow et al., 2005). Nonetheless, power imbalances are related to how knowledge confers prestige and distinction (Bourdieu, 1993). Medics in this study were not freshmen nor were they in the very last stages of medical training. However, since they had already experiences with patients in different clinical settings they no longer had idealistic views (Becker et al., 1961) but rather realistic ones close to what they will encounter when becoming professionals. In addition, almost all HS showed personal motivations to continue their healthcare studies, whether this was for taking care of their families (who were struggling with health issues) or to deal with their own health issues.

7.7 Professional Identity

Eating is a way of expressing a personal identity by itself (Pollan, 2008), and perhaps this is shaped by the formation of professional identity. At the same time, professional identity influences HS personal identity regarding food. It is important to note that participants had different answers and reflected on foodways and DA according to their own particular contexts, but also corresponding to their curricular focuses. Medics expressed more ideas than the other professionals about the ways in which they demonstrate their professional identity. Nonetheless, by identifying new areas that needed improvement in their professional role, HS intended to diversify their knowledge and skills (Nancarrow, 2005) as they increase their experiences in healthcare settings. Clinical practice is performed under specific value priorities (Nairn et al. 2012), but also within a specific physical environment or space that is experienced in certain ways, for instance, a clinic or hospital (Hawick et al., 2018). This is related to how HS's identity is shaped (Hawick et al., 2018) and how HS's *habitus* is produced (Bourdieu, 2007). The space in which future HP are trained has been considered previously in Mexico (Consejo & Trevino, 2005).

One salient finding, as displayed above, was how dieticians were more aware of the importance that psychosocial factors had for DA than other HS. This has been documented previously as psychology contains some elements that have been integrated into the existing medical paradigm (Cohn, 2016). Nutrition sciences, however, have more flaws than it cares to admit (Pollan, 20087) and have failed in integrating all potential influences to foodways which are emotions, hunger, appetite, and sociality (Bertran, 2010); or a more psychosocial view of health. Perhaps in some cases, there is an interdisciplinary change through a horizontal substitution (without a marked hierarchy) rather than a vertical one, where hierarchies are maintained (Nancarrow, 2005). Firstly, nurses considered mental health as part of a holistic health concept. Perhaps this comes from an extended nursing role that advocates for development according to patient need (Allen, 1998). Secondly, medics considered psychology important to assess patient potential adherence, especially to know the kind of attitudes patients might show in general consultation, which was rarely related to DA. Although some dieticians and medics tried to obtain more knowledge on psychology, which Bourdieu (1993) would consider as educational capital, this was arguably due to their *habitus* but also as a result of shaping their professional identity.

Bourdieu's concept of *habitus* considers a reproduction of a professional ethos and an acquisition of a prestigious cultural capital (Luke, 2007) almost unconsciously (Bourdieu, 2007), as well as an acceptance of rules without questioning them (Nairn et al., 2012; Bourdieu, 1993). However, although social agents (HS) deal with cultural relations and internalise certain cultural codes (Bourdieu, 1993) they also want to obtain extra information as their reflections and experiences evolve throughout their practices. Additionally, HS only expressed that they wanted this knowledge to shape their DA (although the section of cultural system describes other justifications), and not to gain privileges and distinction (Luke, 2007).

In the next subsection, HS's ways to negotiate their professional identity with their emotional and moral struggles are presented.

7.7.1 Emotional and moral mechanisms

Dieticians mentioned various struggles and constraints that triggered their emotional eating. Medics presented even more emotional eating and some known symptoms of struggling with their mental health (some mentioned anxiety or were dubious about their self-worth), which was only evident when grouping information related to food and feelings and emotions. Since they did not directly disclose health struggles, it appears they had not considered the

importance of these aspects for patients, especially when offering DA. In the case of the dieticians, their professional identity might make them more aware of how to use certain foods to compensate or to escape from their emotions. The effects that certain chemical components contained in foods have on the person have been widely documented (Ashwell, 1990). However, eating due to emotions elicited embarrassment in some HS while they were externalising this. A physiological mechanism here is that humans tend to look for carbohydrates because under stress circumstances when cortisol mechanisms are triggered (Lovallo, 2011), there is certain bodily deficiency that is trying to be compensated with sugar. Along with this physiological effect, a psychological state after eating, for instance, sleepiness, affects food choices due to associative learning (Ashwell, 1990).

An underlying mechanism to stress can be the powerlessness that can be manifested in a somatic way, which at the same time is related to health inequalities (Freund, 2011). On the other hand, there is evidence that points out how biological systems in the body that generate addiction to foods such as sugar and fat given the reward internal system (Rivera-Dommarco et al., 2018). This is another plausible explanation which is considering stressors as triggers. Social tensions and interactions in this sense affect internal mechanisms, which explains why HS reported feeling stressed by their taxing curricula and given their social disadvantages (low availability of food, support, and income, to name some). Their academic expectations as future health professionals might not match their daily constraints, hence triggering stress, as a material world is experienced by bioagency and can be manifested through a psychosocial pathway. The internal sensations cannot be accessed by others but are real, which suggests a bioagency in place when there is a socialisation, and this can vary from one individual to another (Freund, 2011), but the mechanism at work is a biopsychosocial embodiment. However, psychosocial mechanisms related to health inequalities have been criticised for unlinking health with stressful events and in this sense, a critical realist perspective does acknowledge a relational approach to the different domains (Freund, 2011) that can explain these stress mechanisms.

Bourdieu (2007) highlights the habitual or regular as part of *habitus*, which is regulated without being organised (Bourdieu, 1993). The idea of *habitus* seems to fit in HS actions, although they would encounter different scenarios during their practices. However, this idea could not fit within my data as HS discourses were leaned towards their need to interact with their social world to make sense of this world, upholding aspects that could be useful for their healthcare training. This reflection, which was being constantly renegotiated, was acknowledged through interviews, food diaries. Hence it highlights HS's agency and identifies an important limitation in Bourdieu's thinking of *habitus*, and this is why a critical

realist perspective fits in better, given its dualistic approach to agency and structure. Foucault and Bourdieu illustrate that the power works best when it is applied as soft power. In other words, not explicitly as an authoritarian means of making people behave in particular ways, but rather as behaviours that are internalised by external factors. It is evident that the relational approach to knowledge works in this context, as the students shaped their professional identities.

Before HS begin their degree, cultural norms already existed, for instance, observation and examinations of bodies and therefore its control (Lupton, 1997). Hence HS's meanings and interpretation of these cultural norms are constantly negotiated at home with their families, at school, and with their peers or colleagues. However, this is not a fixed process. HS also try making their identity work with their own moral framework, but this is used for offering DA to their patients as well. HS negotiate their identity when they offer advice to patients and make food choices. Yet, every choice related to food is a path, constantly intended and reinvented, and this is shaped by society, access to food and historical views on food (Bertran, 2018). An essential element of HS professional identity is the type of knowledge they acquire, which perhaps substitutes some lay notions of the world and what it means to eat healthy or advise on diet.

7.7.2 (in) Formal training

HS needed to navigate between two types of knowledge, professional and lay. Discipline, however, was a word that most HS used to define what they needed and what their patients lacked, drawing constantly on critical language. Sometimes HS, especially medical and nursing students, mentioned that only when patients suffered a concerning a health problem they could truly understand and be aware that they needed to make changes in their alimentación. Indeed, this was also the case of one medic and one nurse that had health issues, and therefore also had more accurate information about a healthy diet. This last factor has been pointed out as an important influence on food choices in general populations (Mulvaney-Day, 2012). In the empirical literature, nutritional knowledge has been associated with a higher awareness of HS's own food choices (Crowley, 2014). In this way, professionals and patients are not so different, since they face similar struggles and they are, in a way, framed within a cultural system. When it comes to promoting health, even when the curricula dictates there should be prevention rather than treatment, HS seem to be unaware of this, but when patients were acutely ill due to a lack of health promotion, HS placed responsibility in a personal decision (Shin et al., 2013) about attitudes to prevent illnesses.

Some HS such as dieticians and sometimes medics receive training on how to deal with patients through language that is not necessarily spoken but that also affects the ways in which patients respond (Fairclough, 2010). Language needs to be understood to identify some meanings attached to it (Nairn et al., 2012). Although this research did not intend to frame language from a constructionist approach, language is central and influences a conception of the world (Elder-Vass, 2012). For instance, through their speech, HS seemed to shape patients' responses to treatment or their level of adherence. On the other hand, HS recognised that knowledge had an important impact on patients when they explained (using language) to them what happens internally or the effects of certain diet and food. Educational institutions have been intertwined with power specifically with the use of language (Fairclough, 2010) but there has been a lack of focus on medical perceptions and concepts and rather a more scientific and political unit, prevails within the medical institution (Bourdieu, 1993; Foucault, 2002).

HS are under pressure to prevent illnesses (or to apply this knowledge), and few actions seemed to be put in place to tackle the broader or structural mechanisms. One mechanism that was indeed structural, was that they considered their skills and tools to be insufficient. Another was the lack of time and lack of curricular focus on these issues. In this way, although expectations and pressures are many, HS were not incorporating their "theoretical" nutrition knowledge to use it as professionals, but rather had a more pragmatic approach to address what they encountered during their practices. On the other side, some HS disagreed with the proposed guidelines, which was consistent with what others reported about the low feasibility (Alba, 2015; Frank, 2007) and confusing (Alba et al., 2015) dietary recommendations that HS learned. There has been a previous disagreement on how beneficial but at the same time (contradictory enough) prejudicial, a traditional Mexican diet can be (Rivera-Dommarco et al., 2018). Nutrition guidelines were created in the early 1990s in response to the public's demands for information (Bertran, 2010). However, when some HS observed medical emergencies or complicated nutrition-related cases, a lack of uniformity in the use of nutrition guidelines seemed to prevail, which is consistent with what others (Teixera & Budd, 2010) have reported as constraints to providing advice. Some argue that although various contradictions in medical practice or economic interests are in place, medicine should indeed be of service for others (Coburn, 1999), which is relevant for all allied health professions equally.

HS had various justifications for their unhealthy alimentación, especially medics, who said that their curricula, as well as other social constraints or broader mechanisms, did not allow

them to eat consistently healthy. A lack of consideration of a healthy diet as a part of medical curricula has been reposted as a barrier to healthy eating (Van der Veer, 2011). Nonetheless, they struggled with understanding these broader mechanisms for their patients' lack of compliance and assigned an individual responsibility. One of these excuses is the availability of Mexican food in the streets as well as their companions, although at least one student from each discipline said that it was feasible to eat healthy in the street. None of the participants recognised the long history of street food vendors (Bertran, 2010), it is evident their social representation of food in the street means it is unhealthy. Historically, but also reinforced by these participants, the poorest people have been labelled as the bad eaters (Biltekoff, 2012).

Regarding companions, the way in which a Mexican family is set and distributed appeared to play a role in some foodways, affecting HS's failed attempts to make their families eat healthier. This is aligned with Crowley's (2014) findings but contradicts what Conroy (2014) mentioned about having higher confidence to advise HS own families when nutrition training was offered as a standalone course, not as part of its curricula. This might be related to a cultural configuration of the family, which is peculiar in Mexico, although another explanation is that as this course was not part of their regular training, more tools on patients' adherence were provided. In a similar study, this motivation was actually higher when HS had healthy eating habits (Schlair, 2012). HS in this study struggled with their family influences but also very often they did not have their families as companions, which perhaps made some feel conflicted and led them to eat in a different way. They needed to obtain easy, fast and cheap food to sustain themselves, but that is not to say that they yearned to have companions or taste traditional flavours and so on. HS also reported different mental states when being with different companions. This reinforces the idea that they are still adopting different identities depending on their context. It can be a generational issue, as some authors have discussed and debated whether industrialisation has allowed workers to live better because no foods are "interchangeable commodities", losing all connection to the place of origin (Pilcher, 2005). This could be part of the prior identity that HS had before starting their healthcare degree. After explaining the various tensions with which HS had to deal during their healthcare training, the next subsection discusses an alternative approach that can integrate in a more comprehensive way the mechanisms that regulate how HS deal with patients' foodways and with their own.

7.7.3 Advocating for an inclusive approach

Dieticians might be trained to consider only individual and internal mechanisms as explanations for illnesses and hence to tailor DA accordingly. This is because individual

freedom and autonomy to think "rationally" regarding diet has been encouraged (Abbots & Lavis, 2016; Colby, 2013; Schaefer, 2016). However, the context and circumstances that affect this "rationality" are not taken into account. HS expressed the need for more information on psychosocial tools, hence why they did not disclose their eating experiences with patients. In this case, the Mexican culture, as well as their family customs and social pressures, could have affected making "rational" decisions. Within individualistic societies, the decision for choosing healthy foods is left as a personal responsibility, hence a moral character is yielded (Rodriguez-Arauz et al., 2016). This does not mean that internalisation of food choices does not have an influence a role here but it emphasises how relational this decision is (Abbots & Lavis, 2016), in the sense that involves social influences and underlying mechanisms such as their type of training and the type of messages HS learn to teach patients. In this section is worth noting that psychosocial theories have been used to asses to what extent HS are willing, ready to have and aware of healthy lifestyles, in which dietary habits are included (Blake & Harrison, 2013; Black, 2012); but also how HS can provide effective counselling (Black, 2012; Frank, 2005).

Professional knowledge of nutrition and diet is rarely gained by non-dieticians. The little training provided focuses on a scientific view of food and eating (Pollan, 2008), minimising historical and cultural influences. Dieticians raised that the gap between theory and practice was huge. HS professional knowledge is defined by their practices and the area in which they rotate, their curricula (including type of education: private or public), and their teachers' emphasis on nutrition topics. HS in this study were clearly showing authoritative and authoritarian attitudes and hierarchical practices amongst patients and to other health professionals. These practices from teachers, mentors, and supervisors, as well as a hidden curriculum, tend to reproduce gender hierarchies in medical education, and promote both social division and different views to the practice of medicine (Castro, 2014).

Physicians hold a greater power amongst other health colleagues within the healthcare system (Becker et al., 1961). Moreover, medics learn quickly from their teachers that they can decide how to channel their efforts and how much work to do (Becker et al., 1961). However, this only shows half of the outlook for healthcare professionals. HS identity is not fully formed, and they are working their way through it, adapting what they have been told. It is clear how their experiences and discourses are interrelated with time and space even if they seemed unaware of this (not interpreting it critically as agents). Although they are being reflective, it is not clear whether they were being critical or only reproducing the *habitus*. In the case of dieticians, there seemed to be hints of worry, scepticism, and inconsistency with what they believed to be their role and what patients (or other professionals) would expect

from them. They also reported to feel remorse, anxiety or shame for contradicting this sense of "being themselves" rather than new professionals. When "identity at work fails, tensions and the possibility of breakdown follows" (Alvesson & Wilmott, 2002; 626); highlighting the influence of managerial discourses as part of HS professional identity. In fact, culture is an important mechanism for HS professional identity, because as long as this culture is reproduced in their education, this will inevitably shape the role in which HS feel situated (Singer et al., 2016). Some rules and social orders within this professional role, however, might be problematic.

Some cultural discourses addressed by Foucault (Nairn et al., 2012) serve to explain how professional medics can be discouraging towards some students. Perhaps medics have been mistreated as other evidence has suggested (Castro, 2014). A couple of medics said that their supervisors were constantly disappointed with the little information students had. Several criticisms, however, have been made on Foucault's organisational studies (Al-Amoudi, 2007). However, Foucault argued that agents are conscious of how subversive they are and perhaps, in this case, some repression forces in the medical profession have their grounds and roots quite established (Foucault, 1990). This regulates supervisors' and teachers' power, first towards their own apprentices, and second, towards other subversive allied health professions. Nonetheless, that is not to say that a few HS did reflect on and question to themselves, perhaps not the power dynamic directly, but their own actions, their own self-worth. If becoming a doctor will confer on them power or status, perhaps this is why they demonstrated the need to constantly study, which is part of the clinical experience (Becker, 1961).

7.7.3.1 Hierarchies and rules

Hierarchies tend to increase employee loyalty or commitment (Alvesson & Willmott, 2002) but can also legitimatise social functions or differences (Bourdieu, 1993). Ultimately, this regulation of feelings and identifications will create a sense of "we". An example was shown when most medics refused to talk negatively about their supervisors or teachers, especially if HS were already professionals, which shows how they take care of each other. Additionally, it seemed that medics reproduced their teachers' behaviour because, somehow, these teachers had earned a place with certain social status partly due to this behaviour (Castro, 2014). One of the key studies in the literature reported that when students did not observe their mentors providing advice (for instance in diet) they would not do it themselves (Rose,

2011), which demonstrates that HS were indeed following their mentors', instructors' or teachers' example.

HS were not always aware of how they reflected on their practices but some of them were conscious of their actions to have healthier foodways and of the ways in which this had an influence on their DA. Bourdieu minimises the importance that this conscious reflection has (Nairn et al., 2012) and considers that thoughts and perceptions, as well as actions, are arguably mechanical (Bourdieu, 1993), which may not explain these findings. From here, CR fits by acknowledging participants' agency (Archer, 2005) and by proving a rationale to promote reflective tools as well as an epistemological way of questioning reality (Consejo & Trevino, 2005) to improve the way in which HS adapt to medical knowledge. That is not to say that HS seemed coherent to their clinical environment and their new identity where they had a managerial role with patients (Alvesson & Willmott, 2002), as more than half of the participants narrated experiences where, although they were outside their classes or practices, they still acted as if they were at the hospital, thinking clinically for many daily life situations.

Nursing training has been traditionally set to rule-following (Davies, 2000) but also to produce the malleable workers within healthcare staff (Allen, 1998). Some nurses used information that patients have shared with HS, and later they transmitted this to other patients. At the same time and consequently, HS tried to substitute patients' lay knowledge with a professional one. In the medical profession for instance, since the eighteenth century, a way of legitimising medical knowledge was by fighting against the charlatans, alternative medicine and so on (Foucault, 2002) that patients, as consumers of medical knowledge, sought (Lupton, 1997). HS were in the process of developing a hybrid identity that included on one side their lay knowledge along with their experiences and on the other side their recently acquired professional knowledge and their academic experiences and attitudes. This process might influence how HS practice health sciences (Moffat, 2016).

7.8 Summary

In the present chapter, five major categories were discussed with theoretical arguments against and in favour. CD appears to be a philosophy that fits as a general framework for the thematic analysis. Food culture is an important mechanism to explain HS responses and attitudes. Although gender is related with food culture, especially for the way in which HS

made sense of foodways, it was considered a category in its own since gender issues were also linked to some aspects involved in providing DA, such as educational features. HS cultural system was evident through their attitudes to foodways, dieting and communicating nutrition guidelines. Additional to other factors, the healthiness of foods was considered as a means and rationale to assign views, judgments and stigmatising attributes on patients and HS' families and friends. Professional identity was broadly illustrated throughout HS speeches on how they negotiated and dealt with their foodways and offered DA. Power was evident in situations and scenarios where HS offered DA to different people (family, neighbours, colleagues, peers and friends) not only to their patients. This had to do with status in inter-professional relations and with hierarchies since it was clear that the difference in disciplinary focus was creating an extensive gap, where power imbalances and stereotyped views found a place. The next chapter assembles the thesis by presenting the main conclusions as well as recommendations for future healthcare practice. It contains important implications that are relevant for public health planners, policy stakeholders, educational planners, and local communities.

Chapter 8 Implications, recommendations and conclusions

7.3 Introduction

In the discussion chapter, four major categories were presented with arguments. Firstly, food culture within a critical dietetics framework; secondly, a normative cultural system and its implications for HS' foodways and DA; thirdly, the professional identity that shapes counselling skills for recommending food that promotes health in patients; and, lastly, power, status and hierarchies, and how these concepts affect inter-professional relationships within healthcare systems.

A dominant discourse has been reproduced through an uneasy relationship between food and health, and healthcare professions have contributed to perpetuate this discourse. CD has sought to tackle these ideological influences through critical attitudes towards systems and mechanisms that emulate this "scientific" view. However, CD is part of a marginal discourse that can nonetheless represent a way of resistance to dominant views that are spread amongst HS. Evidently, this raises questions on how nutrition and dietary precepts and issues are addressed nowadays and how we offer dietary education, especially when HS have strong influences of their culture when forming their professional identity with social meanings, values, and attitudes towards foodways, Mexican alimentación and diet, also have an influence in the way HS negotiate their identity and their advice on diet. Additionally, HS also maintained strong boundaries between their own behaviours (and personal image) and what they expect from patients, which is compliance and submission to HS/HP's recommendations. This has implications in different arenas within healthcare structures and policies, and this section presents, from main participants to wider circles, implications for HS, professional, patients, society, and health policy. The paramount aim of this research is improving and enhancing how healthcare is delivered, through DA. This section articulates the main arguments and the potential use of this research to relevant parties. It also contains suggestions for further research, which are explained after the section that provides a summary of an ongoing reflexivity, which is crucial when qualitative work is conducted. Finally, the key conclusions are presented.

7.4 Implications for healthcare students

One of the most relevant implications of this study draws on the educational features surrounding students that will eventually have to offer DA. With the aim of tailoring the implications to the obtained data (through interviews), but also to the current curricular approach, some highlights of the HS' curricula are presented next.

Each curriculum, except for the private university (Nutrition) was online and publicly accessible. The private university facilitated their own curricula. Once the interviews were completed, some complimentary information was offered in both public universities. The approach to diet and nutrition topics was sought given the different focus and type of training that the three different universities might have regarding their healthcare training for each profession. When the curricular analysis showed that nutrition contents were barely included in medical and nursing education, and that there was a lack of uniformity amongst schools, which were all potentially approved and framed by the same institutional basis (COPAES, n.d./), it made sense that participants stressed the need for more knowledge. Only one or two subjects or modules mentioned superficially matters of health promotion (in which nutrition was included) for non-nutrition disciplines. However, there were not specific subjects on counselling practices on diet, alimentación or food.

It is noteworthy that dieticians were the ones that declared more training could be offered to them, as well as more opportunities for practising what they learned theoretically. A hegemonic medical model has been documented since the early 1980s, which is based on an individualistic and "scientific" approach to disease (Menéndez, 1998). Nonetheless, it has been suggested that this view conflicts with the communitarian alternatives to this model (Menendez, 2005). Although this medical model exists regardless of its limitations, an element to consider is how HS come to know certain information and how this is then transformed into healthcare practice (Moffatt, 2016).

As the same students noted, they were all practising or have practised, and the ones highlighting inadequate nutrition education were firstly nutrition and secondly nursing students. Nurses received basic knowledge and training about nutrition, but some participants also emphasised that they have to address many aspects in patients before providing DA. Although the current predominant educational model is competence-based, there is evidence for a more heterogeneous healthcare education in Mexico (Blancas & Barcena, 2018).

Finally, even when some medics reported receiving at least some practical knowledge on alimentación from their supervisors, there is, first of all, no formal way to deliver this training (not explicitly included in the curricula) and, secondly, they often do not use this knowledge for themselves. The more detailed analysis is included in Appendix 11. Given that HS disregarded patients' lay knowledge and yet they themselves used this type of knowledge, perhaps it would be advisable for the HS curriculum to acknowledge the tensions surrounding the utilisation of this type of knowledge together with the one they acquire at university. In the following sections, some recommendations on how HS educational system and training could be better utilised and improved are presented.

7.4.1 HS foodways and the DA they offer

Food culture, as a vital contextual element in the language and practices of Mexican HS, had a major influence on HS foodways. This culture, however, highlights a difficult relationship between Mexican food and health, especially in a country that suffers from an obesity epidemic. Historically, however, hegemonic views on obesity have been encouraging a positivistic approach to dietary health with little emphasis on contextual mechanisms. As mentioned in previous chapters, these underlying mechanisms are highly relevant for understanding HS foodways, such as time, availability (and with this location), commensalism and socioeconomic mechanisms (income and employment). Traditions and customs are part of a culture in which HS interact and belong, hence influencing their foodways. Most customs were related to the healthiness of food, quality, and taste. Holidays and special occasions such as birthdays represented a constraint to consuming healthy food as some HS would prefer. HS lacked resources (time, money, availability, family support) is a significant mechanism that prevents them from having a balanced diet. In this sense, more support is needed from HS' teachers, supervisors and healthcare institutions through offering HS more time to eat, guarantee their access to healthy foods within a clinical setting and leaving time in their timetable for them to look for nutritious, tasty and affordable food, which is feasible, given HS' testimonies about the availability of a myriad of food around their universities and practice settings.

Emotional eating was the main causal mechanism of guilt in HS, and this was reported to make them loose appetite or increase it significantly. Excessive or deficient eating were two situations mentioned when they had certain emotional and mental states, as well as for stressful periods. However, these mental states were attributed to other people's presence, such as family but also friends. Gatherings and celebrations justified these cravings or emotional eating. There is a high sense of morality and ethics around food, translated into

shame, embarrassment of HS own foodways, especially for foods with a social representation of "unhealthiness". If eating is causing stress, the latter has further consequences for health, as evidence linking fatty or sugary foods with stressors in human health is considerable (Adam & Epel, 2007). It is therefore important that stakeholders and educational planners involved in the food and nutrition regulatory framework think about the relationship that HS students have with food. There is strong evidence to support the use of frameworks such as CD or mindful nutrition (Simon, 2018) to help students develop a less problematic and more acceptable (for students themselves) relationship with food and their emotional and mental states. Indeed, psychosocial and mental health preventive strategies help students cope with certain pressures that they reported in this study, and some authors have provided evidence of how to design a programme that tackles these issues (Lattie et al., 2017). An interdisciplinary intervention that was tailored to a Latin-American audience could be easier to utilise for Mexican students, and this strategy could promote less guilt or emotionally negative eating (Sabataini et al., 2019) rather than only psychological insights. These recommendations can help to adopt a relational model of knowledge. Medical schools or universities that prepare future healthcare practitioners should be the primary contributors towards HS improving not only their counselling practices but also their own health behaviours and lifestyle (Yu et al., 2015), perhaps through health programmes, to encourage a culture of healthier allied health professionals (Duperly, 2009).

Some experiences and low-cost strategies can enrich HS training and their future practice as it can evoke a self-reflection about their foodways. Using a food diary and reviewing this with their supervisors, teachers and nutrition professionals, enables HS to recognise their relationship with food. Additionally, it would also allow HS self-reflection to challenge negative associations (such as punishment) that were described in this thesis, and change it to a more compassionate view. If HS seek advice from a dietician or doctor and expect to achieve their health goals (Buraphat et al., 2017), they can reflect more on how patients feel and understand them (Texeira & Budd, 2010). Increasing food and cooking competences has been suggested within nutrition education at basic levels (Cooper et al., 2016; Raber et al., 2016; Sahota et al., 2001) to promote a better quality in their students' alimentation. Indeed, HS can benefit from this, both on a personal level and as a way to expand what they can recommend to their patients with regards to diet. Sharing practical ways of applying nutrition knowledge through recipes has been suggested recently (Lambert, 2019). HS can also disseminate their experience with food to a non-judgmental audience with whom they can later reflect to improve their ways of providing DA.

There are ways of empowering HS through enhancing their capacity to analytically reflect on their educational process but also on their practices whilst studying. A participant described how a lecturer who encouraged them to do exercise, even during his lectures, helped them to increase their awareness of dietary issues. This lecturer did this in a non-judgemental way and focusing on various options for them to have a healthier lifestyle. This seems a positive way of leading students, encouraging congruency in the profession. HS' supervisors may want to discuss with them some mechanisms that influence their health behaviours and critically reflect on how one or both parties can address and improve these issues. Critical learning promotes reflection and also considers the learner's needs to be facing real people and to make decisions if necessary (Fairclough, 2010).

When health promotion has been applied to HP (in Mexico) some improvement has been evidenced in their overall health (Bustos-Eslava & Rivas-Valles, 2006). However, there is evidence that health promotion is not consistently included in medical curricula and this is perhaps because there has not been a straightforward or rigorous way of measuring the impact that this has on patients' health improvement (Hays, 2018). However, it is relevant that HS engage in this promotion and therefore we can empower them so they can tailor their advice (Shahar et al., 2009), with various strategies that can be used. Nutrition topics should be included in medical education (Burch et al., 2017) since these professionals are the first contact for patients in the Mexican context. However, care should be taken to avoid reproducing an individualised view of health as the only strategy for improvement. Herring et al. (2018) showed that when training was provided on nutrition, pharmacists felt more confident to educate patients regarding diabetes, and this can be trialled for other allied health professionals. Another option is a web-based tool to increase self-reflection towards health and self-care (Rakel & Hedgecock, 2008), however, this type of strategy has the danger of placing an individual responsibility on students, and therefore increase the pressure they feel to take care of themselves. This is why each strategy should be assessed based on each healthcare training environment. The pertinence of teaching nutrition and dietetics notions to HS is explored next.

7.4.2 Relevance of nutrition knowledge and training on diet

Social occasions and culture constitute important mechanisms for HS' foodways, and, in this way, HS should negotiate with patients' culture to advise on diet. In this sense, nutrition topics related with counselling patients in healthcare professions need to be planned with a specific cultural relevance (Arauz, 2016), as well as emphasising a need for tailoring advice to patients' social and cultural practices. Attitudinal surveys can contribute with some

evidence alongside in-depth qualitative research that addresses culture when offering DA (Jancey, 2016; Lambert, 2019).

The medical curriculum did not include any nutrition or diet-related subjects and some of these students – but not all of them – had acquired knowledge only through some tutors or supervisors whilst practising in clinical settings. Any understanding and training on topics such as health and nutrition needs to take into account underlying factors, such as biological and psychological ones, which are not separated but relational. There have been a few examples of how nutrition is taught to medical students developed within the UK environment (Ray et al., 2012) and this can be applied for Mexico. An approach to health education that considers a focus on patient strengths, knowledge and expertise (Unwin & Unwin, 2019) can support in a better way an adherence to DA that HS offer.

Some authors (Alba et al., 2015) reported that HS are keen on learning nutrition during the first stages of their studies, especially if it was a non-compulsory course. Counselling practices seem to increase the more nutritional knowledge and often training HS have (Alba et al., 2015, Elwell, 2013; Schlair, 2012; Van der Veer, 2011). Interestingly, a couple of academics with whom I interacted in the field did not seem to think nutrition training was being applied as it should. They said that in some cases, curricular planners believed it was possible to shorten all nutrition knowledge (in health and disease) in one semester and some universities seem to want that medics took care of the roles of nutritionists and dieticians. Either way, nutrition knowledge might be scrupulously guarded by their institutors, to teach this to those who indeed seek to specialise in such a broad area. It was proposed to use the topic of "Sociologia y Antropologia de la Alimentacion" so that students can be socialised during their training with ways of addressing patients' foodways with a more integrative and interdisciplinary view of customs, traditions, and meanings of food (Benzi & Serafino, 2013; Sobal, 2009). Although this was researched in Nutrition students, this can be applied to all healthcare disciplines. Future advice on diet coming from any healthcare professional (Adamski, 2018) needs to emphasise the whole of the food experience, and not only its nutrients or components, which will breed a less problematic relation between food and health. They must rephrase language when advising with a more positive moral connotation to precisely avoid a troubling relationship between health and food, as well as stereotyped views. It is crucial to recommend diet through the understanding of historical accounts and cultural beliefs rather than a discourse of food as a fuel.

7.5 Implications for health professionals and their training curricula

7.5.1 HS own health practices

Gender had a strong presence within the cultural traditions of some foodways processes in HS. The morality of health and diet, especially regarding losing weight and dieting, was framed by gender. Pressures to maintain a "healthy" weight and appearance were higher in female participants, and healthcare systems seem to be built up under patriarchal precepts (Coburn, 1999) from which knowledge-based professions seem to emerge. Availability, pertinence, accessibility, acceptability and no discrimination should prevail as well as proving public resources favouring public health issues (Lopez & Moreno, 2014). Moreover, Otero et al. (2015) have stressed that the Mexican State needs to provide solutions to the so-called neoliberal diet (which includes energy-dense foods sold by multinational businesses and foods bio-technically designed) through inequality-reducing health policies to tackle the increasing rates of obesity and malnutrition. As a reinforcing strategy, peer-support groups have been used when students want to lose weight, and rather than using cognitive restraint, improving their eating practices or know more about healthy eating (Manivannan, 2018). Acknowledging that this has been declared the Decade of Action in Nutrition (Demaio & Branca, 2018; WHO & Consultation, 2003) this study can add some light to strategies that can be of potential benefit for how we educate our future healthcare professionals but also how we deliver dietary health to patients.

This research demonstrated that HS's lifestyle and dietary practices are influencing patients not only through DA but as a basis for having a negative perception of healthcare professionals. While HS expect patients to comply with health advice, they also acknowledge that although they would like to comply with a healthy diet, it is challenging for them. The problem comes when they do not realise that their patients might be facing these same difficulties and HS assume patients will have a higher "consciousness or awareness" and follow healthy eating advice (Peate, 2012) irrespective of what professionals do as "role models". There is abundant evidence from this dissertation and the broader literature (Peate, 2012; Potgieter, 2015; Ray et al., 2012; Rogers et al., 2006; Yeager et al., 1996) that points to the importance of congruence and credibility of HS through their healthy lifestyle and diet. The Patient Promise (Peate, 2012) is a checklist that goes through HS own health practices and a starting point could be to include this in the curricular planning for healthcare professions in Mexico. While (2015) proposed a way of addressing the lack of congruency for UK health workers, and although they acknowledged structural mechanisms

causing this, they proposed several digital tools that can be used to improve eating habits and lifestyle practices. One of these tools was a smartphone app that was launched as an essential part of an initiative for nurses that implemented a 12-week behavioural change programme with the aim of enabling nurses to reflect on their own health practices as well as the barriers that prevent them from achieving their wellbeing goals (Royal College of Nursing, 2019). The component on diet included wellbeing assessments, healthy tips and recipes; and the overall initiative has been evaluated through FGI and has as its main goal to enhance credibility in nurses when they need to offer public health messages.

Training in nutrition degrees in Mexico is mainly focused on tailoring DA to patients' food choices/habits (Garcia-Alvarado & Garcia-Rillo, 2013; Hernandez-Chavez, 2017). Interestingly, nutrition guidelines did not seem to be applied equally in every researched university. Dieticians could practise their skills, attitudes, and knowledge by training other HS or allied health students, empowering at the same time how to follow these guidelines themselves (Jerome et al., 2018). This is an opportunity for an inter-professional learning or knowledge facilitation from dieticians to other allied health professions, which has shown benefits in other contexts (Burch, 2017). The ongoing programme of "Healthy University" that coincidently was brought to my attention by one of the research teams in the study settings could utilise the new knowledge and motivation that nutrition students have to tackle the reported problems. In this university more than a third of fresher students present overweight or obesity, almost half of women report emotional eating and at least a quarter of students had restrictive eating behaviours (Lazarevich et al., 2016). HS own health practices had an influence on how they made sense of dietary counselling and how they constructed their professional identity and some implications are explained next.

7.5.2 HS development as professionals

Although it was clear that curricula were not homogeneous (between a private and public university), the various social representations and stigmatising views were predominant in all nutrition students and, as a consequence, these are reproduced in a clinical domain. Although dieticians received nutrition education and various subjects related to DA (found in their curricula), they reported more opportunities to practise what they learn in real scenarios were lacking. A reformulation of healthcare curricula, especially for nursing has been suggested so that through decision making, nurses are capable of improving their practical care (Porter, 1991). A more critical approach is crucial for planning training stages within healthcare education that contain subject matters such as food culture, sociology, and anthropology of health, history, and traditions (Pollan, 2008) as well as health with a social science focus. In

this sense, anthropology considers both scientific and humanistic views of nature and culture (Lindee et al., 2003) and can be a better approach to food and health. Under a critical realist view, it is even possible to think in a future where the account of experiential data and context can be strongly considered to fall under the umbrella of CR rather than in the positivist view (Porter, 2017). This can be complemented with the active input of dieticians as members of the bodies that plan medical curricula (Burcher, 2016). These subject-matters can also increase the non-nutrition students' understanding of health models and dietary guidelines, which have proved to be challenging to understand (Jerome et al. 2018).

Although curricula were analysed and contained a couple of subjects related to psychology and communication strategies, HS reported the opposite. Disciplines such as psychology are taught mainly to identify patients' attitudes as well as persuade them to adhere to the provided treatment (White, 2016). In this way, an emphasis on showing authoritative attitudes through these different types of knowledge in the curricula is confused with a holistic focus on health. Perhaps HS did not absorb psychological knowledge nor relate it to DA. It can be that these subjects were taught at the beginning of their studies, and HS were still working their way through to understanding them but did not consider how to apply them. It could be also the case that students were also mentioning psychology as important given the current worrying rates of mental health issues in healthcare among Mexican students especially (Martinez-Martinez et al., 2016; Tadeo-Alvarez et al., 2019). Recently, a conversational model based on solution-focused therapy was proposed to develop a more understanding and compassionate approach to health goals, for instance regarding diet (Unwin & Unwin, 2019). They propose to explore patients' issues and resources to tackle health issues before telling patients off or mention feasible solutions for them. A screening tool is available to detect to what extent patients are having negative emotions related to food, as it has been reported before in Mexican students (Lazarevich et al., 2016).

Support should also be available for future HS within their training environment (Manivannan, 2018). Having a broad perspective on foodways would help professionals to recognise when patients are dealing with difficulties regarding these topics and to address those more holistically. The mentioned model of Unwin & Unwin (2019) serves also for supervision processes, for academic or health monitoring purposes; because the model acknowledges what is already working, recognises what could be applied in the immediate future and it helps to notice the progress in the accomplishment of health goals.

Now, with regards to being credible when offering DA, HS believed in building up an empathetic relationship with patients to raise awareness about the importance of following a

healthy diet for patients and their families. When practitioners start a consultation asking patients about symptoms, they might sound a bit robotic and this closes communication (Laughey et al., 2018). Yet students argue that they do not have the time (Ammerman, 1993), and blame the system. Despite this, for a few HS, empathy was a key aspect in a patient-practitioner dynamic. This perhaps would need a regular practice when dealing with patients, who have expressed that nurses, for instance, need to have a greater interest in patients' personal lives (Alvarez-Bermudez et al., 2018). HS were still uncovering to what extent they needed to be empathetic without crossing the line between transgressing professional boundaries and showing care and compassion for their patients (Mercer& Murphy 2008). Allowing more interactions between patients and HS in real scenarios was a key suggestion for healthcare curricula and this has been suggested by other key authors for this research (Black, 2012; Blake & Harrison, 2013), and some (Foster, 2002; Thomas, 2006) emphasised improving HS's counselling abilities is essential as well. Empathy is a crucial component for effective consultations as patients want to feel listened to and also wish to establish a human connection (Laughey et al., 2018). Trained actors are useful to simulate patient-healthcare professional interactions (Laughey et al., 2018), hence increasing a critical reflection on how to successfully build empathy.

Some of the constraints to offer DA within healthcare systems and their organisation were previously analysed. Most HS stressed the lack of time, which is supported by Texeira & Budd (2010), whereas other literature (Howard, 2018; Lobelo et al., 2009) have shown strategies of communication that emphasise brief effective and ordinary interventions (i.e. a brief motivational interview), allowing them to utilise their experiences and knowledge for the treatment, enhancing patient health as a consequence. Other research in nurses showed that, due to administrative burden, they do not have time to interact with patients (McGarry, 2009). However, nutritional knowledge for non-dieticians seems more readily available for doctors and nurses, although it is important to consider other allied health professions that need to have a broad idea about diet and nutrition (Adamski, 2018). Nonetheless, HS who gave advice regardless of the time available, pointed out other constraints on providing advice instead, such as a lack of knowledge and certain attitudes from them towards food. There is a compilation of texts and literature resources relevant to the Mexican context, which is related to alimentación, foodways, diet and health (Calderon-Mazzotti, 2016) which can be used to plan curricula around these topics. This will help in building a more holistic approach to health (Vargas & Aguilar, 2002), by understanding alimentación and its complex process, foodways included.

With regards to power imbalances, which were evidenced in this research, a more empathetic relationship needs to be encouraged. HP can empower patients through an educational process in consultations. However, by separating education from the service that health professions imply (Allen, 1998), this educational process is not completed. Additionally, some power imbalances between medics and nurses or dieticians, and between qualified or training nurses, can be explained as the current medical culture has been criticised for using strategies that create inter-professional disagreements (Castro, 2014). These issues should be addressed from an institutional stance thus avoiding the need to keep reproducing these marked hierarchies. Nurses acknowledged the knowledge gaps between them and medics, and tried to address this with patients, often with information that sometimes they were not so sure about. Professionals boundaries have been defined when qualifications and extended training have been pointed out to be significantly different (Abbot & Meerabeu, 1998). Structuring the suggestions and proposals that HS offer, will serve them during their practices, to increase their experience in addressing these constraints. One essential component in the PPr is the population of patients which is affected by, firstly, HS/HP attitudes and, secondly, the structures that define dietary guidelines, educational strategies to counsel and so on. Some implications are mentioned next.

7.6 Implications for patients

7.6.1 Obesogenic environment

Given that HS constantly mentioned obesity and dieting problems as a rationale for their anti-fat and anti-sugar statements, the extensive connection with a cultural system concerning food, health, eating behaviours and foodways - irrespective of the health discipline - was of clear importance. However, views on obesity are inclined towards biases and stereotypes that have little to do with a holistic approach to health (Dennet, 2019). Furthermore, it has been suggested that an anti-fat bias and obesity stigma cause illnesses additional to discriminative attitudes towards patients (Tomiyama, 2018). Additionally, some HS mentioned that fats were being demonised and sugars were being encouraged by media and government, hence why some patients believed that a healthy diet did not normally contain fats. Some underlying causal mechanisms here are the food and pharmaceutical industries. Although a negative influence from the food industry was recognised by some HS, the health or pharmaceutical industries were barely mentioned. Both industries have a hidden agenda of promoting guilt when individuals eat what has been promoted as "unhealthy" (Rivera-Dommarco et al., 2018). This has arguably allowed the reproduction of stereotyped views and social representations of food, dieting, and health through songs, sayings, social

occasions, and others. Research evidence contained in some journals (Dennet, 2019) also reinforces the moral discourse in potentially future healthcare professionals by referring to "bad" and "good" habits, and by dichotomising food. As long as this type of knowledge keeps being spread, there can still be a marked moral connotation attached to dietary education.

For the case of my participants, an obesogenic environment was mentioned by some HS, along with some suggestions on how they can address this strong influence. Obesogenic environments have been reported higher amongst people with lower motivation, information, and resources; however, DA guidelines have had little or no adjustments according to this environment (Rivera-Dommarco et al., 2018). The World Health Organisation (WHO) proposed “healthy people 2020” and Mexico intends to follow this (Rivera-Dommarco et al., 2018), hence the current policies in place are increasing sugar taxes, restricting food industry marketing and adapting food labels to people’s lay knowledge (Calvillo & Szekely, 2018). Some research has shown that after implementing some of these policies, purchases of nonessential energy-dense foods decreased, but overall diet quality was not assessed (Batis, 2016). It is important to enable a comprehensive educational and cultural strategy that fits within regulatory systems and normative frameworks for professionals to discuss dietary health with patients.

A conflict of interests has been evidenced in Latin American populations around health scientific events (Canella et al., 2015), which has affected the way in which scientific publications present sugar as a disadvantage for health (Nestle, 2013), increasing the presence of dominant discourses (emphasising individual health behaviours) in healthcare education. The Mexican government should use a structural perspective that involves policy designers, educational planners, research stakeholders, healthcare governmentality and health practitioners, rather than an individual view for addressing issues on how food is advertised, with a special focus on maintaining overall food security, agreeing with health promotion principles. Using lay epidemiology to eliminate barriers for health education and promotion has value in this context (Davison, 1991). Considering the context in which these strategies are developed helps to tailor the strategies. Another often problematic dynamic was the PPr and there are implications of this.

7.6.2 Relationship between HS and patients

It cannot be stressed enough how professionals should work hand in hand with patients because instead of using patients’ lay knowledge (for instance about the use of alternative

medicine), HS discard this and sometimes work against it. It has been shown that first, there are more physicians than dieticians inside healthcare teams; hence medics should engage patients into discussions on diet, contributing to dieticians' role (Khandellwall, 2018). Secondly, there is evidence of how brief preventive health messages from physicians can have a high impact on patients (Ammermar, 1993). In this sense, instead of constantly attempting to change patients' food culture, it is pertinent to utilise food and dietary guidelines only as a basis to recommend the food. It is almost an art to gather all pertinent tools and be able to communicate dietary recommendations in an efficient way (Adamski, 2018), and guidelines to discuss dietary health with patients should have cultural appropriateness (Kreuter et al., 2002) for the relevant social group, their lifestyle, their professional focus and broader aspects such as the Mexican gastronomic culture.

According to what my participants reflected about education, there is a lack of organisation in educational practices towards patients, especially through talks, lectures and health promotion, and Fajardo-Dolci, (2011) supports this. Although mechanisms or factors that explain how a person with normal weight can become obese are not completely clear and comprehensively documented (Vigarello, 2013), dietary education framed under the dominant medical model in Mexico puts individual responsibility (Menendez, 1998) at the centre of this health issue. Within this relationship, weight bias needs to be addressed (Darling, 2019), to encourage the idea of a compassionate rather than judgemental relationship between food and health. A practical task that can be applied during HS's training can be doing simulation training that triggers reflections for potential weight biases (Persky, 2011). Besides, a reintroduction of no longer used native foods (Pollan, 2008) when offering consultations to patients, acknowledging the millenarian nutrients that some food such as amaranth can be relevant for Mexican patients. In Mexico, some research has been conducted to attempt an evidence-based medicine approach for medical students only, having positive results especially in medical attitudes and appraisal skills but showed some issues of vertical or horizontal integration (Sanchez-Mendiola et al., 2012). An unbiased and critical view of food and its link to health should be part of health literacy in patients, providing a counter-discourse to social media or informal sources, guidelines and normative frameworks from shaping their beliefs.

HS said that they were constantly trying to increase and improve their knowledge and skills to achieve patient compliance. Psychology and communication tools and strategies were mentioned to increase HS professional knowledge but also elements that promote credibility to patients. Rather than authoritarian or authoritative approaches to patients, HS should be trained to develop their professional identity by critically integrating their lay knowledge and

by acknowledging dogmatic views on food, individualised practices for health and dieting, and a curative focus on diseases. This acknowledgement would allow students to be critical and reflective about these mechanisms. There have been programmes that reported empowering HS as agents of their health decisions within this patient-clinician relationship (Forbes et al., 2019). A qualitative study found that patients needed professionals to help them translating nutrition guidelines into realistic recommendations for patient daily life (Lambert, 2019). Some information technologies (IT) strategies can also help to improve patient-clinician relationships by empowering patients according to their convenience and individual circumstances (McGinn, 2016), for instance, Instagram platforms containing more critical and clearer nutrition messages (Lambert, 2019). A study on a similar topic suggested that having printed or written materials available for patients can increase the readiness of professionals to counsel and can be an effective tool for awareness among patients (Anis et al., 2004). The structures that plan and develop policies and educational requirements can be involved with the findings of this research in a positive way, and this is what follows.

7.7 Implications for health policy

7.7.1 Views on diet and health

DA tends to promote adhering to scientific guidelines, which do not normally consider cultural, political and ideological content (Biltekoff, 2012). Quite often the assessment of what a "good" diet is considered only some nutrient measurements and selected guidelines (Biltekoff, 2012). Additionally, according to this view, a healthy person should not exceed the consumption of their dietary allowance (Rosado et al., 1995). Nutrition, seen as a science, has started to label food as "good" or "bad", and consumers very often link expensive with good and healthy and cheap with bad or unhealthy, but this is not often the case (Schaefer et al., 2016). People, however, attach social representations to food. An anti-obesity policy is being promoted without considering that communication campaigns continually promote a difficult relationship between food and a healthy lifestyle (Abbots & Lavis, 2016). No policies seem to exist in Mexico about avoiding a weight stigma amongst medical and healthcare professions, nor to tackle biased health and food media and marketing campaigns. It is, therefore, crucial to start conversations on how this weight stigma itself is causing more negative than positive consequences (Tomiyama et al., 2018).

Dieticians, who are the healthcare staff appointed to teach on nutrition and dietary issues, seem to be positioned in the arena by broader structures such a healthcare and educational systems that often assign them complex cases (Adamski, 2018). It would be relevant, then, to

reflect on the professional profile of dieticians or HS considering all the structures that influence dietary health. To incorporate a community paradigm where geography and further considerations on food availability are addressed would allow a greater autonomy so that consumers can choose according to their family and personal preferences with fewer contrary mechanisms (Dover & Lambert, 2016). From a policy perspective, health inequalities should be tackled at micro and macro levels of action. Concerns regarding how dietary health is taught to patients emerge partly from how health training itself is delivered. Therefore, a priority should be revising contents and ways of delivering healthcare curricula in every institution that has permission to teach these important degrees. The way in which healthcare is delivered at clinics should be a priority as well, to address issues that can be barriers for an egalitarian and inclusive primary care. Key stakeholders at all levels should be involved to promote further studies on how an ineffective response to socioeconomic causes has promoted inequality (Lupton, 1997), which not only affects wellbeing (Porter, 2019) but also how healthcare training is delivered.

Educational and health promotion practices offered by HS and HP affect society's health literacy and therefore increase or decrease resources that the population has to make a change in their foodways or health behaviours. Although there seems to exist a myriad documents and regulations that are part of the National Agreement for Health (ANSA for its initials in Spanish), HS, especially non-dieticians, seem to rely only on the basic norm for obesity, which has changed relatively recently to include dieticians in the process of prevention and treatment of this disease (NOM-008, 2017). These documents, however, should involve society (e.g. businesses and local communities) before being implemented, to evaluate how feasible and relevant they can be for communities and, hence aiming at public health interventions that have a more community-based approach to diet (Fox, et al, 2016). It is important to locate contradictions within healthcare curricula that encourage dietary counselling, and patients need to be empowered so that, in their role as food consumers, they have uniform information to make informed food choices (Calvillo & Szekely, 2018). One example can be illustrated with the current model for a healthy diet in Mexico. Some foods that HS mentioned as unhealthy (by social representation or because their trainers have told them so) are included in this model, thus causing confusion within the PPr. To critically interrogate the role of food consumers within healthcare curricula should be an ongoing activity. Healthcare structures are the ones developing this, but the effect can be broader and involve more organisations, which is proposed next.

7.7.2 Health policy and involved structures

Some authors have suggested that an individualistic tone dominates policies, thereby moralizing health behaviours (Warin, 2011) and blaming people for their "own" health as a way of avoiding the State's responsibility to oversee a community and comprehensive health approach (Jancey, 2016). "The key feature of the neoliberal rationality is the congruence it endeavours to achieve between a responsible and moral individual and an economic-rational individual" (Foucault, 1979:12) and this applies in the sense that self-determinate decisions and self-care are part of a yielded autonomy of these rational individuals. Although it would seem that this is divesting the state's responsibility, an epidemiological report from the Mexican government specified that obesity and overweight are not personal responsibilities, and they aimed to train health professionals accordingly (Cordoba-Villalobos, 2010). However, no specific actions were noted and pedagogies and strategies for this training seemed ambiguous (Cox et al., 2013); hence this study can contribute to designing a non-weight centric policy plan (Bombak, 2014), and to tailor the type of pedagogies that can be applied and the type of mechanisms that affect broader levels of regulation.

With regards to DA, the question of whom HS are serving is raised, given the constant pressures of healthcare systems for productivity (quantity over quality), and HS are in danger of following this dynamic to keep their jobs (Ioannidis, 2016). Although patient-centred nutrition consultation is an approach that can help HP to recognise how patients construct their symptoms and diseases (Vargas, 2016), and it can also imply less burdensome in HP (Uniwin & Unwin, 2019), in other disciplines, such as nursing, this approach has received some critiques as it creates a practitioner-based division of labour (Allen, 1998). Moreover, there is evidence suggesting that nutrition issues should not be addressed from a health perspective, but rather as an understanding of the whole social and political context that underpins how work and employment have become more and more flexible and unequal (Dover & Lambert, 2016).

Among the issues discussed in the last chapter was the problematic relationship and various barriers that inter-professional collaboration implied, especially when it came to offering uniform DA to patients. An interesting proposal could be a faculty development to support inter-professional education, which, although it needs contextual factors to be set in place, can represent a viable solution to trigger self-reflection in HS through mentoring and guiding them regarding the importance that this collaboration has to benefit patients (Watkins, 2016). Ultimately, patient improvement is a key element for a rewarding consultation for both HP and patients, and applying models and proposals that enhance health can increase self-

confidence and decrease demands on health services (Unwin & Unwin, 2019). After discussing implications for practice, the strengths, weaknesses, and scope of this research are summarised next.

7.8 Scope, Strengths, Limitations

This research sought to understand HS foodways, which are relevant to the profession due to how nutrition; alimentación and dietary issues are addressed in a country where obesity is considered an epidemic. In this way, this thesis has contributed to understand what, why, where and for what purposes HS eat, which has been highlighted as an important research priority by specialists in the field (Bertran, 2010). Nonetheless, this research did not aim to find a way to measure diet or find a definition for it, nor used methods for counting calories and portions consumed, as these are reliable up to a point but do not explain dietary complexities in breadth. Diet has been studied separately from the subject who consumes food, and food has been broken down into its components, therefore quantifying and assessing diets as individualised actions (Abbots & Lavis, 2016). Instead, this research attempted to address broader systems that surround the causal mechanisms of HS's foodways. As a result, a problematic relationship between foodways and DA was evident given various social and cultural circumstances. This can have further repercussions, first by making HS prone to health issues in the physical and mental sphere and, secondly, by offering narrow, biased and markedly dichotomised advice to patients.

This research contributes to critical nutrition studies that underpin the main findings and the thematic analysis. CD along with CR can contribute to supporting the understanding and further study of ideologies that define dietary health (Biltekoff, 2012). Although it is evident that no generalisation can be produced, and that quantitative measurements can help locate students with deeper health issues, it has been stressed repeatedly that wellness strategies are needed to take care of the healthcare provider during their studies (Potgieter, 2015) and this research can contribute in such way. This thesis stresses on rethinking the concept of dietary health and how this is addressed and taught to future health professionals. However, the previous literature showed that most medical and nursing students have been the focus of attention. Moreover, the socialisation of these two types of students has only been of scientific interest (Castro, 2014). In this sense, this study also contributes by narrowing the gap that has been pointed out (Timmons & East, 2011) between non-medical (or allied) healthcare professionals and medical professions by including dieticians and nurses in a problem that is also relevant for them.

The methods that were used have strengths and limitations. First, this study contributes to being comparable with other qualitative studies such as Alba et al. (2015), which was conducted in a similar place to Mexico (Colombia), and can help to compare students with their similar rather than with HP. Second, participants in FGI could have been responding according to what is socially accepted and if there were a few disagreements amongst them, they would not explore further. This was shown in the nursing FGI when speaking about neighbours' advice. A participant said she drank a "special" juice every day for her stomach pains and when asked who recommended this, the other participants were about to laugh because they must have thought her "neighbour" did, and I observed that this first participant perceived this and immediately said that she knew that from her professional training (which is socially acceptable). This is the potential influence that the friendship had on the response since participants were laughing before this statement about how patients listen to aunts, *comadres* and godmothers rather than to professionals. Despite this, rich insights were obtained to prompt new subtopics within individual interviews. An advantage from individual interviews was that participants did not have these influences, although perhaps they could have felt assessed because I asked them to write and if possible photograph what they ate, which for some can be a potentially sensitive topic (Aldag & Tinsley, 1994) and talking about food seemed an uncomfortable topic for some participants.

One of the limitations of qualitative research is that participants could present views on behalf of others (Morris, 2019). In the specific case of this research, some participants often described their food-health relationship by explaining other people's feelings or beliefs (Ousley et al., 2007), such as patients, family or friends. This reinforces the idea that for people it is easier to talk about others, especially within a group interaction, but that does not necessarily mean that their perception reflects their practices. Still, this is relevant because it tells us about their judgments and values. Due to feasibility factors, it was only possible to interview students, however, professionals that have more direct contact with patients and that also need to make decisions with regards to treatment and follow up, should be interviewed to obtain a better picture of the situation. Findings are suggesting that interviewing other parties such as their teachers, supervisors, and patients can be part of further research because these people have an important influence on how HS negotiate their foodways and adapt the new knowledge to the health promotion or education they would teach to patients. One advantage of doing a qualitative study, on the other hand, is that, firstly, I had the opportunity to constantly reflect on my role as a clinician, researcher, former teacher of HS, insider, and interviewer. This process also helped add rigour to the study. Secondly, I was able to adapt the interview guide to each participant and be flexible

about the kind of questions that could help me answer my research queries. Thirdly, provided that this was an unexplored topic in Mexico, qualitative research helped me understanding wider reasons why this phenomenon was happening (Guba & Lincoln, 1994). Qualitative research is especially valuable for arenas related to health anthropology (Kiefer, 2006) which includes cultural, historical and social aspects of foodways and DA in this case. Since CR was present at every stage of my research, and I made this transparent in every section, internal consistency was demonstrated (Carter & Little, 2007).

Strengths of the present work are: to start with, this is the first Mexican study to our knowledge that describes the relationship between foodways and DA in HS, it also included students from three different health disciplines and data was collected within three different universities in the central areas of Mexico. Moreover, social sciences applied in this work were useful to move from a bio-psychological domain to the social (and therefore occupational) mechanisms, which have a greater influence on humans' health (White, 2016). Further, Alvesso & Willmott (2002) have stressed the relevance of in-depth studies that contained at least semi-structured interviews to know more about the process of identity regulation in professions. This research is relevant in the sense that it displays aspects influencing HS formation of identities such as a normative culture system, power, status, and hierarchical issues. Lastly, this research is original as it shows some inter-professional relations between dieticians and other professions that have knowledge of nutrition as well as some dietary notions, at least, as stated in their current curricula. Consequently, it contributes to understanding the different status of these professions (Timmons & East, 2011), but also, to know how all these professionals, with different approaches and knowledge, deal with patients' dietary issues. Although confidence to provide DA has been reported to increase and improve significantly after years of experience in clinical fields (Adamski, 2018), the HP/HS own behaviours, practices and experiences have not been addressed sufficiently, and in this sense, this research can add light for future research about it. The most important benefit of qualitative research in this work is that this is an effort to understand a highly complex, contested and controversial aspect of life, such as food-related with health, and in this sense, social sciences can help to spread this highly relevant topic.

Before the concluding remarks, is important to mention what is still to be investigated, what can be done after this study, and how this research can set the grounds for other related topics.

7.9 Recommendations for future research

For further research, perhaps triangulating both foodways and DA would be useful. This can be done with participant observation of food street vendors and HS' supervisors. They do not necessarily realise students' constraints, but they can testify what they have seen them select with more frequency. People involved in the patient-relation dynamic can be included as well, such as other professionals, retired professionals, and patients themselves. To understand stereotyped views and weight bias and to what extent this is affecting health promotion, would be valuable at a later juncture. Healthiness and social representations of food and health concepts can be causal mechanisms influencing DA and it can be studied to what extent this affects compliance in patients or chronic disease's treatment.

Further research is also necessary to explore how HS make sense of DA and foodways. In my study, I let students define what these concepts meant for them but they did not say explicitly. Most participants believed that DA was about classifying foods in a "good/bad" dichotomy, as well as patients' actions into "right/wrong", depending on their beliefs and social representations. It would be interesting to understand further how health services and health messages interrelate and what room for improvement exists (Larkan et al., 2015). The food-health relation seems to be a highly complex and contested one, and highly relevant for the current time and space in Mexico alone.

Qualitative studies such as ethnographies and oral histories need to be conducted consistently for long periods to precisely understand how these complexities can lead us to tailor advice that can be followed and adapted to patient needs, and that improves both health practitioners' and patients' foodways and health practices when dealing with these topics. It is therefore important that social and historical complexities are acknowledged by allied HP but also by researchers in the clinical field (Fujimura et al., 2008). Although most HS reflected on the importance of the context of being HS to follow healthy behaviours and foodways; yet when it came to advising patients, an individualised approach was highlighted, and they were not considering overall social influences from food. In further research, HS's interactions with patients can be recorded to see to what extent they apply what they learn professionally (DiMatteo et al., 2003), and how they negotiate this identity during their training.

More research is needed not only to find out more about power relations in medical professions (Castro, 2014) and in other allied professions, but also because a hierarchical division, but also a subordination of some occupational groups to others (Abbot & Meerabeu, 1998) has been promoted by supervisors previously (Castro, 2014). Moreover, health

professions, who are linked with offering some type of advice for NRD (dieticians as a start point) need to be studied, so that they can provide a positive and critical health-food relationship, hence efforts from other professionals would not be in vain.

For further research is also important to highlight gender differences with regards to every category discussed, since hiding this would keep reproducing practices that have devalued and neglected social groups such as women and also lead to maintaining a gender hierarchy (Harding, 1991). An inclusive curriculum can be conceived as well as a culturally diverse learning environment, especially within healthcare disciplines, where more room for listening to patient needs and a sense of pluralism with regards to DA is possible.

7.10 Reflexivity

Throughout the thesis I have been reiterating how the reflexive part of this qualitative work helped me gained some invaluable insights from conceiving the research topic, designing the methodological strategy and learning critically from the findings. These are some final comments involving this ongoing reflexivity.

Working in the field presented through each interview opportunity for reflexion. While conducting interviews, planning questions, prompting responses and noting down unexpected observations was a mentally and physically challenging process, data collection also led me down a path of re-discovery of my culinary heritage. Observing the food environment was a great tool for triangulation, additionally, it helped me to highlight how this salient element was differentiating this study from others. All FGI helped me enormously in producing more specific questions for individual interviews, but these also pointed me towards interesting views that students had about the world of foodways and DA. Finally, individual interviews were the ones I enjoyed the most because I was only focused on one person and their lives, interested but also identified somehow with how I felt when I was a student, yet I kept my reflective diary (recordings or written notes) updated to avoid projecting my own views and beliefs onto my participants. Triangulation between these different methods provided the most effective way of gathering information while in the field.

Some translation challenges led me to have conversations with important specialists in the field of food and health, and this offered me an overview of their thoughts that eventually led me to increase my analytical eye when I had my data collected. Although I gathered quite formidable data, I made compromises when conducting the thematic analysis. Overall, it seems that most discourses in all HS are related to how to tackle and address obesity

problems. Perhaps I prompted them more for this, or perhaps the obesity epidemic is reaching unproportioned dimensions with very few or insufficient solutions and HS were keen on discussing this. In this way, this research also brings light to a different way of approaching the obesity problem in Mexico.

I strongly believe that in Mexico City, and the whole country, it is possible to have a nutritious diet with what is available for us all at a convenient price, fast preparation, and marvellous taste. This is because I have seen the tables of nutrient contents but also because I have experienced it when studying my two nutrition degrees and afterwards. However, in a world of plentiful but often conflicting, and not always accurate, information about health and food, we are easily swayed by the media or people around us to embrace quick and seemingly practical strategies to pursue a weight loss, disguised as a health goal.
As future HS, we have internalised all the negative views of our Mexican gastronomic culture, and my interactions with heads of school and administrative staff confirmed their belief that nutrition consisted basically in prescribing cognitive restraint to lose weight. As long as mentors and teachers keep holding stigmatised views about other professions and advising on diet, many changes can be proposed but very few, if any, will be successfully implemented.

I will now explain some implications that my professional background and my role as an insider had for my study. Belonging to the Mexican culture, where more than 90% of the population is Catholic (Perl et al., 2006) made me use some words that perhaps I have embedded as part of the cultural and moral ideas that this religion assigns to food, eating and health. Under a Catholic context, particular notions of guilt frame, for instance, dietary and health issues and, often, there are associations between pleasurable foods and feelings of guilt. This, perhaps, makes the relationship between food and health seems more problematic in Mexico than in other parts of the world that are not Catholic in their vast majority (Macias Quintero et al., 2009; Pilcher, 1998)

This was illustrated when I describe feelings of *guilt* within participants rather than *shame*, *anxiety* or *anger*, which were words that they used to describe some of their constraints towards eating in certain contexts.

In the case of my dietician/clinical lenses, these made me interpret some information in HS food diaries in a quantitative way and with a scientific view (caloric paradigm) by noticing the major component of what they ate or craved under the effect of the reported emotions. Some other times I was thinking about their foods to assess their daily consumption in terms

of a rough nutritional balance of macro and micronutrients. The concepts of right/wrong decisions regarding food emerge from a professional training that, at least dieticians like me, undertake. Perhaps concepts of right and wrong are also associated with guilt or punishment through food/diet and, although my participants rarely used these words, it was clear than an ethical framework inside healthcare education points at right/wrong ways to eat.

My education excluded lots of things I discovered during my PhD process and, through engaging and wearing the hat of researcher, I could take a different perspective to understand what was beyond a "lack of compliance".

After conducting this research, my views have changed and I believe my professional identity has evolved, as I now question myself before addressing a question to a patient. I realise now that we, Mexican health professionals first need to develop a less problematic relationship with food and its social representations so that we educate patients while bearing in mind these foundations. Now at the end of this research project, I believe there is plenty of responsibility to be shared between clinicians, patients, as well as bureaucrats who appear to have embedded a neoliberal ideology. I do hope that my research can trigger initiatives at a local level so that this change can begin to be implemented among teachers and supervisors. Lecturers who, like me, have the tools and position to inspire others and to increase awareness of the changes that are needed to repair a problematic relationship between health and diet, between nutrition and medicine, between Mexican food and healthy food choices, and between foodways and DA. To conclude this thesis, a summary and the key conclusions are presented next.

7.11 Key conclusions

The primary aim of this research was to identify, understand and explain what influence HS foodways have on the DA they offer. Therefore, this research documented, through various qualitative methods, what Mexican HS - who are trained to offer DA - eat regularly, considering their constraints to obtain, select, prepare and share this food.
In the last years an apprehensive interconnection between food and health has been predominant, demonstrated by an emphasis and encouragement of quantitative measurements (weight, calories, scores, portions and so on) as an accurate representation of our dietary health. This problematic relationship has led to judge dietary behaviours individually and to openly dichotomising food in “good” and “bad” parameters that have to do with moral judgements about what and when people eat, where they purchase and in

which ways they prefer to consume it. The current cultural system has an individualistic approach to health, and through HS professional knowledge, serves an agenda that discards patients' lay knowledge. At the same time, a judgemental view on non-compliant patients seems to prevail; and from the patients' view, HS need to cover certain expectations regarding foodways, and have certain physical appearance to reinforce an "ideal" and "healthy" image as professional identity. This identity is constantly negotiated by HS, through authoritarian or authoritative attitudes and marked hierarchies amongst medical and healthcare professions. This is accompanied by a certain cynicism, but also by shame and anxiety for not meeting society's expectation of HS to act as role models.

In summary, HS foodways in Mexico have been framed with a strong moral sense within a dominant medical discourse that has measured food from its quantitative components and with regards to its healthiness, which implies a positivistic approach to health. Under a patriarchal view of health and amid hints of gendered foodways, DA has been offered by HS without considering crucial contextual and structural mechanisms that have a greater influence on patient health than a biomedical perspective. HS struggle with Mexican social representations of health and diet, but also with their own dietary health; consequently, they have difficulties accepting patients' normative belief system. Although dichotomised ideas of dietary health, stigma, and stereotypes are the main consequences of their negotiation between professional and lay knowledge, HS are expected to be role models. This maintains a tension, not only between them and their patients but also with their social context (family, peers, supervisors), which ultimately shapes their professional identity. They negotiate these expectations but also observe and learn the power dynamics and hierarchical views of healthcare professional teams, which, along with patients' resistance to this domination, makes them want to reaffirm their status through authoritarian attitudes and seeking a constant broadening of their professional knowledge on food and diet. A critical dietetics framework helps to consider aspects such as commensalism, language, and a cultural system as the main tenets to decrease moral, biased and dichotomised perceptions about foodways and diet, to encourage a more compassionate and reflective view of dietary health amongst HS, who are essentially the first contact point of patients that need advice on diet. This would ultimately benefit society overall and contribute to a more productive policy approach to education and public health.

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APPENDICES

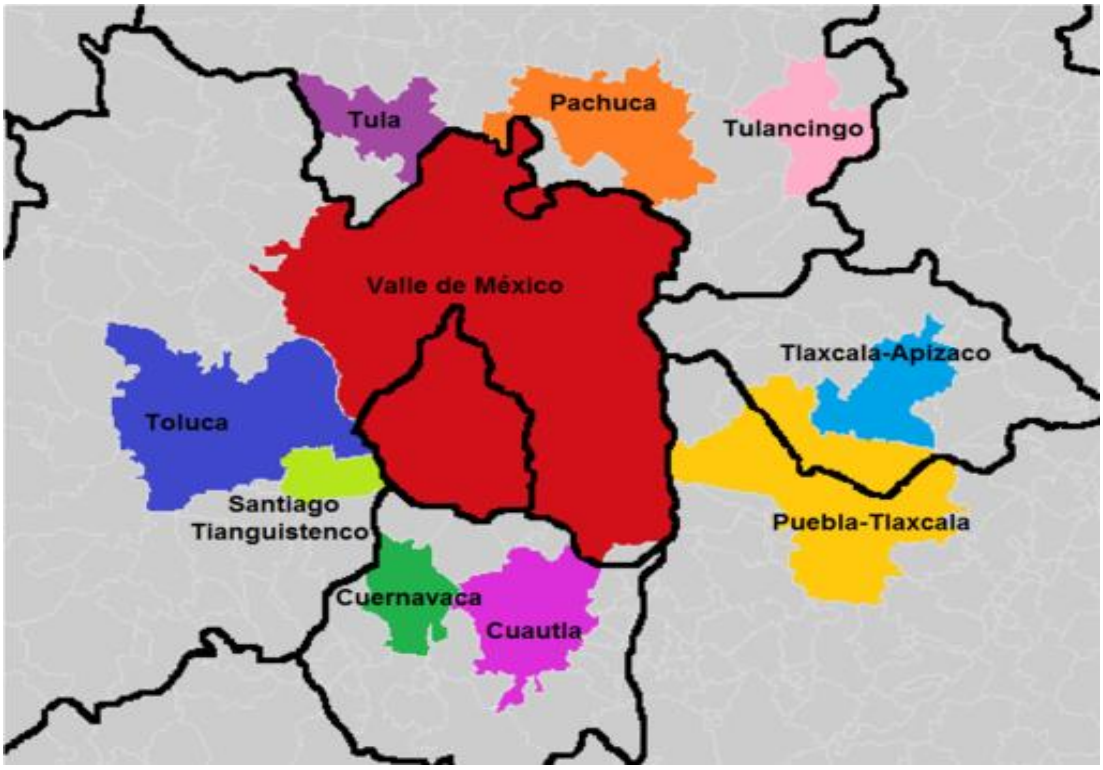
Appendix 1. Map of Mexico and central areas

Mexico in Latin America



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Mexico's central areas



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Appendix 2. Glossary of Mexican food and essential Spanish terms

NAME	Translation
Alimentación	Set of biological, psychological, ecological, sociocultural processes that encompass the collection, distribution, conditioning, preparation and consumption of food, habitually transformed in dishes, meals, and beverages, from which each person obtains, from the environment the required nutrients and with frequency, the physiological, emotional, aesthetic and intellectual satisfaction, common to humans, and contributors to achieve a full life
Amaranth	From greek arnarantos (unfading). Plant (considered cereal given its nutritional contents) also called "alegría" (joy). Its most important part is the seeds that are left to dry
Antojitos	All Mexican snacks are consumed in informal environments or before the midday meal and that are generally sold in the street. Sometimes is considered to be a "treat" until the formal time of midday meal or dinner. This term can be also interchanged with *garnachas*
Atole	Traditional hot corn and masa based beverage of Mesoamerica origin. Nowadays is made of different flavours
Birria	A Mexican dish, a spicy stew made from goat meat or mutton but also of beef
Botana	Variety of salted food in small portions (peanuts, nuts, crisps, ham rolls) while talking in a meeting normally within alcoholic beverages. It is most common in Mexico city
Burritos	Food prepared inside a flour tortilla, which edges are folded to avoid losing stuffing. Its stuffing could be from guisado to grilled steak or only beans. It is more common in the northern states of Mexico.
Cajeta	Syrup of goat milk, liquid but thick with ingredients like vanilla, rum/sherry or cinnamon. Can be prepared handcrafted or through industrialised process
Cemita	Preparation similar to a burger that contains cheese, chiles and various fried dishes
Champurrado	A type of atole which has cornflour, chocolate, and piloncillo (sugary hard honey). It is traditionally prepared in a clay cooking pot and it is normally good combination with tamales and its served hot-almost boiling
Chatarra /cháchara (s)/ churritos	In Mexico is applied to all food without nutritional value, but normally fried and packaged foods are included Although comida chatarra can be also catalogued as "Junk" food, according to recent Mexican regulations, refers to nonessential food with an energy density of more than 275 kcal/100g, which includes a broad range of processed food, such as sugar-sweetened drinks
Chicharrones	Sometimes pork skins or pork rinses, but can be considered as well as crisps or any dried potato

Chilaquiles	Dish that has corn tortillas cut (normally in triangle) and fried and cooked with salsa and are served with onion and cheese, eggs, chicken or beef. It is consumed for breakfast or dinner normally. It also can be served with beans.
Chorizo	Sausage of pork meat cut and spiced with species, chiles, and vinegar. After Spaniards arrived this was prepared with chiles and also cornflour
Chuchería / churritos	Often used as a synonym of *chatarra*
Comida corrida	Midday meal, mainly in big cities targeted to workers that do not return their homes for this. All courses are served one after another, starting normally with soup, dried soup, main course/stew, dessert, tortillas, and beans are normally put as sides.
Cocina económica/ Fonda	Locals (sometimes houses) where full-day meals (*comidas corridas*) with *home* taste are served at an affordable price, cheaper than restaurants
Enchiladas	Mexican specialty prepared with corn tortillas wet of spice natural green or red sauce, they are stuffed with any kind of meat or vegetable. Recipes vary from region to region.
Empanada(s)	Preparation based on wheat or corn flour extended as a disc and stuffed with any other dish folded as in half moon, sealed, baked or fried
Enfrijoladas	Dish with corn tortillas immerse in a broth made of beans and later rolled up alone or with chicken and served with cheese, onion and thick cream.
Esquite(s)	Grains from the corn cob, boiled with salt, water, epazote, and the consumer can add chilli powder (*piquin*) and perhaps mayonnaise and cheese. These can be consumed as antojitos or sweet. These are normally sold in the street
Flauta	See Taco definition
Fonda	Synonym of Cocina económica
Foodways	Popular description of how what and why human beings eat like they do considering societal differences
Foráneo	Participants in Mexico used this term regularly to self-define themselves as being born/raised in a different city to the one in which they were studying. The definition in Spanish is better represented by “outsider”.
Fritanga Fritura	Fried pork skins or fried Mexican antojitos (can be used with if a dish is fried regardless). Strictly speaking, this term defines *Antojitos* when they are deeply fried Generic term for fried pork skins or treats, a characteristic is that they can be eaten with the fingers directly. Very often interviewees were not clear about what they were referring to. However, the meaning in Mexico is for fried Mexican antojitos: sopes, quesadillas, empanadas, gordita, etc.
Garnachas	See antojitos definition
Gordita(s)	Corn dough preparation in a round shape such as tortilla but ticker (3 or 4 times than a

	tortilla), stuff inside includes beans, meat or greaves. There is a variation of the same dough but sweet
Guajolota/ Guajolocombo	See tamal definition below
Guisado	Dish made with a cooked sauce which contains always tomato and *chile*, smell herbs and meat and vegetables.
Milanesa	Preparation with beef steak or chicken with flour and fried.
Mixiote	Beef chops marinated in a sauce with guajillo and pasilla chiles, pulque and avocado sheet contained in a mamey stalk skin and later on steamed and served
Molcajeateada	Means that the salsa is prepared and (most of the times) served in a Molcajete (Lava rock Mortar)
Mole	From the náhuatl *molli* which means sauce and contains a combination of nut, fruit, and chiles (*pasilla, ancho, chipotle, mulato*). The final product is served with chicken and rice
Molote	From the *Nahuatl* moloctic. Antojito of corn dough, similar to fried quesadilla, the stuff and salsa depends on the region
Oaxaca cheese	Normally called quesillo. Is elaborated with rough milk but that forms many threads rolled together and in a round way forming a ball of various sizes
Panela cheese	Fresh cheese made with cow milk but also with goat milk. It is white and soft, porous, and spongy consistency. It can be served alone or as stuff or *botana*
Piquin	Produced powder from a specific chile that is red and this chile made powder can go with any fruit or vegetable as well as with stews like pozole or
Puesto de la Calle	Street food vendor: It is a place or local where foods are dispended, mostly prepared. It is usual to find them inside supermarkets but also on the sidewalk or public squares
Quesadilla	Corn dough heated and prepared with several dishes. In most parts of the country, this is normally accompanied by cheese
Requeson	Curd that is obtained by cheese serum after producing cheese. A type of cheese similar to panela, or fresh White cheese. It is cheap and can be used for many preparations
Rosca de Reyes	Bread prepared with sweet dough, decorated with crystalized fruits, especially *acitron, ate* and fig
Taco Tacos de canasta Flauta	Corn tortilla with dishes, red rice, green sauce Corn tortillas with some guisado put in a basket to preserve its heat and its cover with plastic and a tablecloth to keep them mildly humid. The most common are bean taco, potato taco, and greaves with sauce taco Fried taco with meat/chicken thin but longer than a regular taco (double size). Can be

	considered to be an antojito
Tamal(es)/torta de tamal	TT: A tamal inside a *bolillo*, often called *Guajolota* *Guajolocombo:* A synonym of torta de tamal + atole. A participant mentioned these combinations of foods: a torta de tamal (Guajolota) in this case she combine the word with combo which is a combination of foods
Taquería	Small local where the mostly sell tacos of several types and variations
Tianguis	Street market (not established in locals) that has specific days for working and can travel to different places within different days of the week.
Tinga	Preparation with chicken or meat with chipotle, tomato and onion.
Tlacoyo	Antojito made with a thick tortilla with oblong form and beans or requeson are integrated as part of the paste before this is fried or cooked in the comal
Torta	Some white bread or bolillo (salted bread similar to baguette) with mayonnaise, beans, avocado, thick cream and is stuffed with other animal or vegetable ingredients and all sorts of combinations
Tostadas	Antojito made from corn and crunchy tortilla. It can be eaten alone or with other *guisados*. Mexican normally put beans or *tinga* on them

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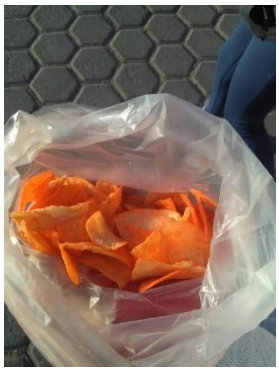
Photographs

Some nutrition students, one nurse, and one medic illustrated what they ate in their food diaries, and some of these words are included in this glossary



Enfrijoladas

Crisps





Bean tacos and mole



Requeson with tostadas



Requeson on toasts



Half torta (milanesa, beans, avocado, *chile chipotle*)



Whole torta (milanesa, chorizo, Oaxaca cheese)



Empanada



Memela



Rosca de Reyes with hot cholate



Tinga molote



Clamato



Chilaquiles



Tlacoyo



Quesadillas of panela cheese



Guisado example – Mexican beef with rice agua de Jamaica



Flautas



Appendix 3. Search strategy for OVID Medline

This search strategy was the base for the rest of databases such as ASSIA, CINAHL, and LILACS

Search statement	**Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) 1946 to Present**
1	(foodway* or (food* adj way*)).mp.
2	Feeding Behavior/
3	Food Preferences/
4	((shop* or eat* or consum* or food* or feed* or diet*) adj3 (behav* or habit* or strateg* or decid* or decis* or pattern* or choice* or preference*)).mp.
5	(Attitude* or opinion* or conception* or misconception* or preconception* or conceiv* or perceiv* or misconceiv* or preconceiv* or taboo* or stereotyp* or view* or prejudic* or judg* or stigma* or cynic* or belie* or disbelie*).mp.
6	(experienc* or understand* or perspect* or percept* or feel* or opinion* or idea* or thought* or think* or valu* or evalu* or approach* or personal* or interpersonal* or respon* or emotion* or aware* or unaware* or know* or assum* or certain* or uncertain* or expect* or engag* or relat*).mp.
7	culinary practi*.mp.
8	1 or 2 or 3 or 4 or 5 or 6 or 7
9	exp students, health occupations/ or exp students, dental/ or exp students, medical/ or exp students, nursing/ or exp students, pharmacy/ or exp students, premedical/ or exp students, public health/ or exp students, dietetics/ or exp Nutritionists/
10	student*.ti,ab.
11	9 or 10
12	((diet* or nutrit* or food*) adj3 (prescrib* or prescrip* or recommend* or advic* or advis* or educat* or counsel* or mentor* or coach* or lifestyle* or life style*)).ti,ab.
13	exp Health Education/
14	exp Counseling/
15	life style/ or healthy lifestyle/
16	Mentoring/
17	(diet* or nutrit* or food*).mp.
18	13 or 14 or 15 or 16
19	17 and 18
20	8 and 11 and 19

Appendix 4. MATRIX OF LITERATURE REVIEW.

Overview: Only three studies were conducted in Latin-American countries, the rest were conducted in the United States (16), United Kingdom/Europe (3), the Middle East (1) and (3) in the Pacific (New Zealand, Australia, and Asia). Only Yu, (2015) had multiple settings across Asia, America, and Oceania. There were two qualitative studies that nonetheless did not explore a direct relationship between foodways and dietary advice. The remaining twenty studies that used a quantitative approach used questionnaires, surveys, and self-reports to obtain their outcome-variables.

The data from the empirical studies was extracted and is presented on the following tables, including these features: title, year and author, setting population and objectives, also, the way in which authors evaluated/assessed diet, eating habits or food choices as well as what elements or statements were used to determine about counselling practices on diet or dietary advice/guidance. Finally, the relevant/key papers were critically reviewed, and some strengths and weaknesses were noted, some by authors themselves, others were found through the critical appraisal of each paper. The results and most salient implication was mentioned also.

CLUSTER A – Food choices/eating habits relationship with attitudes towards dietary advice - 11 studies

Title, author, year	Setting and population (sample size)	Objectives	Dietary assessments vs DA nutrition-related evaluation	Results	Strengths and the most salient implication	Limitations
Foster fourth-year, 2002 Medical students' readiness to provide lifestyle counselling for overweight patients	Southern medical school in the US (290)	Examine the knowledge, attitudes, and behaviours of medical students with regards to modifiable health risks. The latter as a step towards assessing their readiness to engage in lifestyle counselling.	An 83-item self-report questionnaire composed of items on knowledge, attitude, and behaviour about risk factors for cardiovascular diseases (CVD) was developed. It included attitudes toward lifestyle fourth-year, self-reported nutrition (6 items about DNG).	Participants were more knowledgeable of the groups of food that needed to restrict for CVD than the ones they should encourage. Less than 10% rated their own diet as excellent. Less than a third comply with DNG of fruit and vegetable and almost half of them eat fried food regularly. Their belief for counselling about lifestyle declined over the years but the confidence of offering advice on healthy eating was high. Their low belief in changing their patient's lifestyle is a potential barrier to counselling.	The study focused on treatment for overweight patients, however, authors have put some lights on the behavioural change model. The study identifies many areas of further research threading their results to these areas. The authors acknowledged the weaknesses of the used tools. Medical school curricula should focus on improving students' health and wellbeing	The study was only concentrated in CVD and it was quantitative. Further research needs to clarify the relationship between medical school demands and personal health habits. Future research is was to determine whether the change in perception is due to beliefs about barriers to provide advice.
Spencer et al, 2006 Predictors of nutrition counselling behaviours and attitudes in US medical students	Class of 2003 at 17 participating schools on "Healthy Doc" program in the US (970)	Describe the characteristics of medical students associated with more frequent nutrition counselling and a higher perceived relevance of such counselling.	Questionnaire only contained one nutrition counselling question: "How relevant do you think talking to patients about nutrition will be in your intended practice?" Predictors of eating behaviours included 8 items about fruit and vegetable consumption.	Intake of healthy eating declined over time; women had a higher fruit consumption. Few participants felt they have been extensively trained for counselling. Inclination for specialty was determining their willingness to counsel. Students did not feel that the overall time spent on nutrition was worth it.	It was a big sample. Emphasis was put on preventive medicine. They were able to obtain a natural history of the entire medical school experience and trends over time. Important to enhance students' perceptions of nutrition relevance in their training, and to rethink the paradigm of nutrition education, making nutrition more relevant to all disciplines.	They put a great emphasis on finding differences between stages of education. Schools were chosen by convenience which does not allow generalizability of the findings. In self-reporting, students might over-report. Attrition is common in longitudinal studies.

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Ammerman et al., 1993 Physician-based diet counselling for cholesterol reduction: current practices, determinants, and strategies for improvement	Residents and attending physicians at North Carolina Memorial Hospital, US (87)	To assess the nature of current physician-directed diet counselling and possible determinants of these practices as part of a larger effort to develop and test a practical physician-based dietary treatment program for cholesterol reduction.	Self-administrated questionnaire that measured attitudes to dietary counselling (for patients with hypercholesterolemia) and applied knowledge regarding food choices.	Overall good understanding of diet and heart disease. In their counselling practices, residents discussed diet with patients and gave a warning about health risks due to diet almost always. Participants felt effective dietary changes to lower cholesterol, but they had a poor understanding of practical dietary recommendations and found no significant difference regarding type of training, gender, and age. Almost no confidence in offering advice. Some barriers described were a lack of educational resources and time. Personal adherence to a prudent diet was strongly correlated with perceived acceptability. Perceived preparation was positively correlated with prioritizing diet counselling.	This was one of the first studies that successfully correlated the own dietary practices with physicians/residents' advise. They measured the treatment that was provided to patients for a specific disease. If nutrition services are not available, brief dietary messages from physicians/residents might have an impact over time.	Data were self-reported through a psychological assessment. Knowledge seems to be a weak predictor of one's own health behaviour. Findings might only be applicable for hypercholesterolemia patients. Study conducted with residents, which might have different characteristics to students.
Frank et al, 2007 Predictors of US medical students' prevention counselling practices	All medical students of the class of 2003 at 16 US schools (1658)	To understand predictors of medical students' prevention counselling practices.	Survey (*) of a representative sample of 16 US medical schools, measuring perceived relevance of prevention counselling and seniors' frequency of preventive counselling. *Healthy Doc questionnaire (Spencer et al., 2005)	Students with more healthy habits were more likely to counsel about prevention. Schools that encouraged having healthy personal habits believed more in the relevance of health programs as part of the medical curricula.	The validity and reproducibility of the survey was high. The sample size was big. These findings suggest important and inadequately explored directions for medical educators trying to create physicians who counsel patients about prevention.	Variables were self-reported; the survey was made by telephone and paper-based.
Yu et al, 2015 The association between medical students' lifestyles and their attitudes towards preventive counselling in different countries	Five Chinese medical schools, one in the US and one in Australia (425, 500)	Explore and expand the knowledge about the differences in health-related behaviours and attitudes towards preventive counselling among medical students from different countries.	32-item, self-reported online survey, comprised of four sections: 1. general health status; 2. personal health behaviours including diet, health goals and health care seeking behaviours; 3. Health care opinions and attitudes; 4. personal information. One of the exposure variables was DNG's compliance in fruit and vegetable intake	Students with good training were more positive with regards to having a healthy diet, weight control. Students with lower grades have more positive attitudes towards preventive counselling, such as a balanced diet and weight control. Almost all the students felt responsible for the care and improvement of the patient. Differences among nationalities were: Chinese students had the worst eating habits, and Australian medical students needed to improve their weight control.	They used a more complex method to report not only responsibility to practice preventive counselling but confidence to practice this. They compared several countries. Because there is a lack of confidence and effective strategies provide training about preventive counselling is essential in medical education.	Low response rates between universities, especially for Australia. Approach exclusively quantitative.

Memel et al, 2018 Is there a relationship between medical students' personal lifestyle behaviours and their knowledge, confidence, and attitudes towards nutrition in Patient Care?	Medical students from years 1 and 3 (190) in the US	Examine how medical students' personal lifestyle behaviours affected their knowledge, attitudes, and confidence in nutrition counselling	In order to assess students' attitudes, knowledge, and personal health behaviours in nutrition, the survey was divided into three main sections: attitudes and lifestyle behaviours, knowledge, and demographics. Authors drawn in different papers to create a 67-question survey.	Both medical students who ate fruits and vegetables and cooked for themselves were more confident in their ability to provide nutrition counselling. Students with a healthier lifestyle had more positive attitudes towards counselling although they wanted to learn more about nutrition (one of the reasons was because they considered this important to involve nutrition notions inpatient care.	Students who eat healthier and have baseline knowledge in cooking have higher levels of confidence when it comes to translating dietary meal plans and counselling into patient care. Shifting nutrition education away from didactic lectures to hands-on applications is the most effective way to improve medical students' abilities to counsel patients on lifestyle modification. This will bridge the gap between practicing healthy behaviours personally and counselling patients to do the same.	Sample size, lack of fourth-year medical students and perhaps participants were keener in learn nutrition (recruitment bias).
Cardoso, 2019 Guidance on Healthy Eating Habits from the Medical Student's Perspective	Medical students, Brazil (28)	Understand what medical students think a healthy diet is and whether they consider themselves capable of guiding patients to practice healthy habits	Semi-structured interviews where students described what they considered to be a healthy diet but also answered whether they consider themselves capable of guiding their future patients in the adoption and practice of healthy eating habits. The assessment of data collection was done with a thematic representational approach, using words and its meanings. There were 4 subthemes for healthy dietary advice and 4 for dietary counselling.	The four themes that emerged about the first research question were about the need for balancing several sources of nutrients, feeding at more regular intervals, eating more natural foods and avoid processed foods, and purchasing low fat/low sugar products. According to participants, a healthy diet comprises eating at regular intervals, more natural foods, avoid processed and selecting low-sugar and fat products. When having the knowledge, students did not apply this in their own lives, a lack of skills confidence and knowledge was shown as well. Participants said that they would refer patients to the dietician (as they felt challenging to change patients' habits) and only a few participants stressed the importance of actively involving patients on their treatment.	Qualitative study with a topic aligned to the one in this research except because they did not ask about actual habits but only about beliefs of what a healthy diet was. They stressed on structural factors as constraints on patients to follow what medical students (participants) would recommend as a healthy diet. Support activities for patients and future practitioners need to be put in place. To achieve healthier habits amongst patients, patient-centred care was suggested. Empowerment through activities that welcome and support the student and the patient is, therefore, an essential tool for promoting behavioural change.	Not a representative sample Participants were also involved in another qualitative study. This qualitative study might represent a light for other qualitative studies, but these findings may only be applied to future general practitioners. Further studies should be conducted to ask more perceptions of counselling patients to build potential interventions to teach students effective techniques to help patients and decrease rates of uncontrolled chronic diseases.

Duperly, 2009 The association between Colombian medical students' healthy personal habits and a positive attitude toward preventive counselling: cross-sectional analyses	First- and fifth-year students at 8 medical schools in Bogotá, Colombia (661)	To know the association between personal health practices and attitudes toward preventive counselling among first- and fifth-year students from 8 medical schools in Bogotá, Colombia, and (ii) the association between factors related with medical training (e.g., school environment, basic student knowledge on preventive medicine) and attitudes toward preventive counselling.	Healthy Doctor = Healthy Patient questionnaire Compliance with DNG for fruit and/or vegetable consumption. Adequate knowledge on each area (nutrition, alcohol consumption among others) was defined as having at least 60% correct answers on each group of questions in order to objectively assess students' basic knowledge and competency on each habit. Student attitudes toward preventive counselling on healthy lifestyles was assessed by asking "how relevant do you think this will be in your intended practice – talking to patients about nutrition, weight management?"	They found a low compliance with the recommendations on fruit and vegetable consumption Positive association among Colombian medical students, between reported healthy personal habits in nutrition, smoking and alcohol consumption and a favourable attitude toward counselling on each corresponding habit.	A high response rate, the availability of objective data on knowledge about healthy habits, and the use of the extensively tested Healthy Doc whose primary outcome measure of self-reported counselling rates has been objectively validated Interventions focused on promoting healthy student lifestyles can potentially improve future physicians' attitudes toward preventive counselling.	The cross-sectional nature of the study and the possibility of self-report biases; however, the questions related to lifestyle habits were extracted from recognized epidemiological surveillance tools, which in turn enabled comparisons with national estimates for these habits. However, since the study was limited to students attending mostly private medical schools in Bogotá, extrapolation of these results to students attending public schools or in other regions should be performed cautiously.
Khandelwall, 2018 Nutrition Education in Internal Medicine Residency Programs and Predictors of Residents' Dietary Counselling Practices	Residents across the United States (133)	To conduct a contemporary assessment of outpatient nutrition education in Internal Medicine residency programs in the United States, identify predictors of residents' dietary counselling practices for cardiovascular (CV) risk factors, and identify barriers for educators in providing nutrition education and barriers for residents in counselling patients.	Anonymous Survey. Residents were asked about the frequency of their counselling practices, perceived program support for healthy eating habits, and personal fruit and vegetable intake. Residents also answered about barriers they faced in providing dietary counselling.	48% reported counselling half the time they had opportunity, and 22% reported counselling often or always. Furthermore, 61% of residents agreed or strongly agreed that their program encouraged healthy eating habits, and 55% of residents agreed or strongly agreed that their program provided healthy meal options. The mean fruit and vegetable intake of the residents was 3.2 servings a day, and 32% reported 5 or more servings of fruits and vegetables per day. Lack of clinic preceptors' interest in nutrition was associated with lower frequency of counselling	Unlike others, this survey contained information about the availability of "healthy" food. It also included socioeconomic and cultural factors that could predict more aspects of dietary advice. Residents were compared with their educators. Residency is one of the most challenging periods of medical students with regards to time to eat, etc., hence this study adds some highlights to address this vulnerable population. The authors used a validated tool to measure dietary habits. Authors acknowledged various limitations as well as the danger of considering correlation with causation. Authors made evident that there are more physicians than dieticians therefore realistically, doctors should discuss this with patients. Faculty expertise and faculty and resident interests in patient counselling could be improved perhaps by mandating nutrition education in graduate and continuing medical education.	The sample was not representative, and it was impossible to calculate the response rate. It was self-reported survey data. It cannot be established as a causal relationship. Contrary to expectations, personal fruit and vegetable intake, healthy meal provision by residency programs, and program support for residents' healthy eating habits did not significantly moderate the relationships between the two predictor variables and the frequency of dietary counselling. Interaction terms were thus dropped. It is a weakness in their way of assessing this relationship.

Hu, et al, (1997) Nutrition knowledge, attitudes, and practices among senior medical students in Taiwan.	A national sample of 528 senior medical students from nine medical col1eges in Taiwan.	Nutrition is an important issue in medical training, but the nutritional knowledge, attitudes, and practices of medical students in Taiwan have not been elucidated.	Participation in this study by completing a questionnaire that among other questions, contained 10 questions (Assessment about DA knowledge) related to nutrition management in disease states (e.g. cancer, hypertension, etc., nutrition and the prevention of various diseases (i.e., gallstones and osteoporosis) and nutrition status assessment. It also contrasted these answers with six nutrition-related behaviours (evaluation of diet) without specifying if these were validated questions.	Almost 18% of respondents did not eat breakfast. To the question "do you delay or omit your meal when you are busy?" 24% of students answered usually or always. 61% of students ate half a bowl of vegetables every day. Only 30% of students were concerned about the calorie content of their diet. Students scored low in nutrition knowledge and most of them did not know about BMI. Although the vast majority agreed on the high relevance of advising on nutrition, there was not a sufficient understanding of what a balanced diet was	They identified since that time (more than 20 years ago) the need that professionals have on reading labels and add nutrition knowledge to medical curricula as well as started correcting the own health practices with what medics are supposed to promote. On the whole, students considered nutrition to be important in both personal and clinical practice but expressed a lesser degree of agreement about a balanced diet and the comparative bioavailability of food protein quality. The concept of basic nutrition knowledge needs to be emphasized in the medical school curriculum.	The main limitation was that their statistical model that did not associate or correlate dietary habits with counselling on diet. They also used multiple questions about students' weight, health habits and knowledge to manage patients through diet, hence some spurious correlations might have stated. The authors did not identify which part of the medical curriculum could be ideal to include nutrition education.
Rose et al, 2011 Factors Affecting Weight Counselling Attitudes and Behaviours Among U.S. Medical Students	All medical Students (1846) in the Class of 2003 at 16 U.S. medical schools during first-year orientation, orientation to wards, and fourth-year (2002–2003).	To identify the factors associated with perceived relevance and reported frequency of weight counselling among medical students.	They applied a previously validated survey (Healthy Doc) that contained additional questions on diet (presence of vegetarianism + fruit consumption + attitudes to food or the likelihood that they had to change their habits) and on perceived relevance and frequency of weight counselling.	Students increased current fruit and vegetable consumption and the expectation of increased fruit and vegetable intake in the future was associated with viewing weight counselling as highly relevant. In fourth-year students, there was a higher fruit and vegetable consumption and increased confidence that this intake will be greater in the future was positively associated with a high frequency of offering weight The authors. Moderate to light alcohol consumption, compared with no consumption, was positively associated with a high frequency of weight counselling.	This study gains strength from its longitudinal design, sampling to represent the U.S. medical student population, and strong overall response rates. Together, these findings—showing changes in attitudes over time as well as an association between counselling frequency and perceived school support for healthy behaviours—suggest that attitudes and practices regarding weight counselling are malleable and advantage should be taken form the associations between the primary outcomes and greater fruit and vegetable intake as well as confidence that this intake would increase in the near future.	Authors measured many aspects and some correlations might seem spurious. There is also the limitation of self- report. Participants did not specify their weight status. Results provide a low estimation of students' frequency on counselling overweight or obese patients.

All studies in this main cluster included medical students as participants. Two studies were conducted in Latin American countries and two outside an American country (China/Australia and Taiwan). One of the studies did not fully meet the inclusion criteria, however, it was a qualitative study conducted in a Latin American country (with a similar context to the Mexican one) and drew upon a qualitative methodology. The oldest and newest study of all key ones belong to this cluster. The main method was a questionnaire/survey applied online and self-administered. In general, almost all studies included in this cluster had the advantage of having a good sample, but they were all quantitative except for one. Since various studies in this cluster applied the Healthy Doc (HP-HD) questionnaire mentioned for the first time in Frank et al, 2007; it is relevant to mention that this questionnaire was based in U.S. guidelines and this screener helped converting the daily intake to amount of energy (kcal), fat and fruit servings after analysing five days (three weekdays and two weekends days) of participants regular daily intake.

CLUSTER B - Food choices/eating habits relationship with congruence statement/attitudes towards being role model – 4 studies

Title, author, year	Setting and population (sample size). Aims	Dietary assessments vs attitudes partially related to DA	Results	Strengths and most salient implication	Limitations
Blake & Harrison, 2013 Health behaviours and attitudes towards being role models	Pre-registered nurses (540) present in nursing lectures between June and October 2010 at the University of Nottingham, UK Examine health behaviours and attitudes towards the role of the nurse in promoting health	Questionnaire to measure stages of behavioural change (Prochaska & Velicer, 1997). Ten statements relating their attitudes towards nurses being role models for health. Health behaviours and attitudes were compared between BMI groups.	Almost three-quarters of nurses did not meet the DNG for fruit and vegetables and more than two-thirds did not consider their diet healthy. Physical appearance and maintaining a healthy weight were important for them to connect with patients, and more than three quarters agreed that they should be role models.	One of the few studies conducted with nurses in the UK There is scope for nurse training programmes to go beyond health promotion with patients and clients, and to educate nursing students about the importance of translating their knowledge of health behaviours to their own lifestyle choices.	Limited dietary information. Self-reported data. They did not identify the key motivating factors to become role models.
Blake et al. 2016 Healthy Lifestyle Behaviours and Health Promotion Attitudes (HPA) in Preregistered Nurses: A Questionnaire Study	All preregistered nurses within a single UK institution (868). To investigate preregistered nurses' opinions of being role models for healthy eating and their attitudes and confidence toward giving health promotion advice. Also, to investigate the relationship between BMI, self-esteem, self-perception, healthy lifestyle, and attitudes toward health promotion.	For the purpose of this study, a higher amount of fruits and vegetables in one's diet was considered to indicate a healthier lifestyle. Participants were asked to complete a series of 14 statements to establish their views about nurses as role models for health, and their attitudes toward health promotion; consistent with study aims, these had a specific focus on weight management, obesity, and physical activity habits.	Although less than a quarter complied with the DNG of fruit and vegetables, almost half of nurses considered their diets healthy. Body dissatisfaction on the other side was high (78%). 23% of preregistered nurses reported that they would not feel competent if giving health advice. Less than 10% of the preregistered nurses thought that healthy eating promotion would not be part of their job role. 10% of participants stated that they should not be role models for health. Attitudes towards health promotion among preregistered nurses were positively correlated with a healthy lifestyle. One predictor of feeling competent in offering advice was having a healthy diet.	Participants were based in multiple hospital sites and the demographics and health lifestyle profile of the sample were broadly comparable with samples of preregistered nurses in previous studies Improving the health and well-being of preregistered nurses may help to foster positive self-perception and HPA that may ultimately have an effect on future patient care. Preregistered nurses should be equipped with early training around core concepts of a healthy lifestyle, including diet, physical activity, and weight management.	Self-reported cross-sectional data from a sample of preregistered nurses at a single institution. HPA is relatively new and requires validation and reliability analyses for use in future studies.
Ketelaar et al, 2014 Is the change in the health behaviour of Dutch medical students related to change in their ideas on how a physician's lifestyle influences their patient's lifestyle?	Medical students from a major Dutch school (2069) It is unknown in which direction the relationship runs between 1. Medical students' agreement with the statement that a physician would provide better and more effective preventive counselling if he/she adhered to a healthy lifestyle and 2. Medical students' own healthy lifestyle	They asked participants how often per week they generally eat healthy, eat regularly during the day, eat their first meal before 10:00 am, and eat their last meal before 8:30 pm, 1-2 -4 times, or 5-7 times per week. They also asked participants to what extent they agreed with the following statement: "To effectively influence-patients to adhere to a healthy lifestyle, the physician must also adhere to a healthy lifestyle"	Authors did not found evidence of a relationship between a change in health behaviour of Dutch medical students and a change of their opinion regarding the relationship between physicians' own healthy lifestyle and their ability to effectively influence patients to adhere a healthy lifestyle	Although the cut-off point taken to measure dietary habits was not well known, authors have used it before. They acknowledged and compared their results with some of the studies found for all of these clusters. Specific attention should also be paid to the fact that if the medical student or physician does not have a healthy lifestyle he or, they should still engage in promoting health in their patients.	Questions about diet were not validated. They did not inquire for reasons in health behaviours changes or opinions but further studies could.

Black et al, 2012 Personal Health Behaviours and Role-Modelling Attitudes of Physical Therapists and Physical Therapist Students: A Cross-Sectional Study	US physical therapists or physical therapy students (329 students)	Describe health behaviours and role-modelling attitudes of physical therapists and physical therapist students. To ask questions on professional responsibility, authors were based in Prochaska's model of behavioural change and its stages were used for asking in which stage of fruit and vegetable consumption as well as healthy weight were the students. They adapted the scale from Cardinal and colleagues Attitude toward role modelling scale.	Most participants ate fruits and vegetables (60.3%) and maintained a healthy weight (78.7%). However, a bit more than half the participants said they were in the maintenance of eating enough fruit and vegetables. Males were significantly less likely to comply with DNG and to believe this was important to be role models in their field. The lowest level of agreement was reported when looking at healthy eating habits with role modelling. Students were more likely to believe that role modelling is a powerful teaching tool, and that they should "practice what they preach" (although this was not related to diet) when they maintained a healthy weight.	They looked at profession very often forgotten in the healthcare team. They based their assumptions in a theoretical model for changing behaviour (Bandura) and their questions were based on a psychological model. The importance of role modelling is understood by physical therapists, but more so by physical therapist students. Physical therapists have the educational background, the opportunity, and the credibility, as evidenced by their own behaviours, to successfully engage in discussions about healthy behaviours with their patients.	They did not explain many differences between students and professionals, nor did they explored further explanations for the few differences found. The power of the study was 76%, which is low. They study drew upon self-reported data, hence there cannot be generalizability.

This cluster included a myriad of disciplines (nursing, medical and physical therapy) and countries were mostly within Europe and the UK. A couple of studies drew upon one theory related with behavioural change to design the instruments used, especially to ask about counselling practices but also to understand to what extent, healthcare students were ready to apply changes regarding their own eating habits. Most of them used few statements to measure dietary habits and attitudes towards being a role model. They involved and correlated these attitudes with eating habits, according to what authors considered it was a healthy diet.

CLUSTER C – Exposure to intervention (programme, course) and comparison (before/after) of eating habits/food choices with HS attitudes towards preventive counselling or towards role modelling– 7 studies

Title, author, year	Setting and population (sample size). Aims	Intervention and psychological theories used (if it was the case)	Dietary assessments vs attitudes partially related to DA	Results	Strengths and most salient implication	Limitations
Alba et al, 2015 Attitude toward preventive counselling and healthy practices among medical students at a Colombian university	First and fifth-year students of a Colombian medical school. (54) Identify the role of medical training and extracurricular interventions on knowledge and on attitudes towards preventive counselling	They point out the website of the program Healthy Doc for further information on the health program They did not draw upon any theory	The Healthy Doc questionnaire, apart from questions on dietary habits, included knowledge of preventive medicine, overall perceptions of the role of the university environment and the academic program on the subject, and attitudes toward preventive counselling, amongst others. Authors used DNG for dietary habits. The opinions of students on medical training and the university environment and their attitudes toward preventive counselling were assessed using a scale with five options that were subsequently grouped into three categories (favourable, unfavourable, and indifferent).	Levels of compliance with DNG decreased significantly the higher the stage of studies. However, they were the ones that agreed the strongest in adopt healthy behaviours in order for patients to do so. The main barrier to fruit and vegetable consumption was the dislike of vegetables. Almost all students believed relevant to offer preventive counselling but higher relevance was assigned to medical care (treatment). Compliance with recommendations on exercise was associated with a positive attitude toward counselling on diet. The perception of how the health program encouraged healthy nutrition was negative.	Pioneer study in Latin-American countries. Results allow a better assessment of universities' role in prevention as these provide data from specific interventions and characterize students at the beginning and at the end of their training. Considering the increasing burden and economic impact of chronic diseases in Latin-American countries, improving curriculum design and implementing comprehensive healthy university programs should be a priority in any scenario with or without interventions at the population level.	No social determinants for attitudes towards counselling. Lack of clarification of the effects of each level of activity in the program. All quantitative variables for potential causality had a small and non-representative sample. They compared the results with studies of physicians, not students
Conroy et al, 2004 Impact of a preventive medicine and nutrition curriculum for medical students	Second-year Harvard Medical School students (137) Evaluated the impact (after/before) of an innovative curriculum on students' counselling about diet and on their own health habits.	A 28-hour Innovative (non-compulsory) course in preventive medicine and nutrition (PMN). Four weeks of clinical preventive medicine (including counselling); 8 weeks of clinical nutrition (dietary recommendations, dietary assessment, etc.). One explicit course goal is to have students assess their own health behaviour. Later in the course, students received personalized feedback about their results.	43-item survey. It assessed students' dietary patterns (20-item), other health behaviours, and their confidence in their ability to address diet with patients and family members. 20-question food-frequency questionnaire. They also completed and analysed a 24-hour diet record and reviewed it with a dietitian.	Overall health behaviours improved after the course as well as confidence in counselling. Diet did not change significantly although the intervention (course) made them more aware of the increasing consumption of fish and vegetables as well as reducing the amount of sugar consumed.	Authors say they are pioneers in assessing students' personal health habits and self-efficacy in counselling. An innovative PMN course can improve second-year medical students' own dietary habits as well as their self-efficacy in discussing diet with patients. Because these factors can be predictive of physicians' rates of preventive counselling, such a course may help medical schools to meet the public health goal of training physicians on these counselling practices.	Authors did not know which component of the course was most effective. They did not clarify more the assessment of the course. Groups were small, from one medical school, implications were not stated. Self-reports of confidence in counselling rather than an objective measure of counselling skills, such as a structured clinical examination, was the result of resource constraints

Crowley et al, 2014 Impact of an undergraduate course on medical students' self-perceived nutrition intake and self-efficacy to improve their health behaviours and counselling practices	Medical students at The University of Auckland, New Zealand in the first stages of their studies (61) To know the impact (before/after) of an undergraduate medical course (compulsory) that contained nutrition content, to determine its impact on medical students' self-perceived nutrition intake and self-efficacy to improve their health behaviours and counselling practices	12-week course "Digestive System". Approximately one-third of the course was devoted to nutrition content, including 13 hours of contact time and one assessed nutrition practical activity, where students performed dietary recalls on peers and completed a nutritional assessment of their own dietary intake using a computer software. The course did not cover nutrition counselling or behaviour change counselling. However, students concur-rently took a course in professional skills that covered behavioural change.	The questionnaire was adapted from a previous evaluation of a nutrition course at Harvard Medical school. The questionnaire assessed dietary patterns including frequency of food intake, exercise patterns, and other healthy behaviours, as well as their confidence in counselling patients and family members about diet and exercise. Dietary patterns including frequency of food intake as well as their confidence in counselling patients and family members about diet and exercise.	The course helped half of participants on improving their dietary choices and only a quarter of them believed it was relevant to discuss lifestyle with patients and family. The course also increased their awareness of un/healthy dietary choices they made. However, the decrease in confidence in the present study may be related to the course content, which focused on physiological aspects of nutrition, as opposed to behavioural counselling	First study in New Zealand to evaluate whether exposing medical students to nutrition education can improve their own nutrition or eating practices. Medical students can increase awareness of their own personal nutrition behaviour after undertaking a course that includes nutrition content in the initial stages of their degree.	The current course was primarily didactic in nature and incorporated a small interactive practical component. However, the course did not cover nutrition counselling or behaviour change counselling. The changes observed may not reflect an overall change in the cohort of medical students, due to a relatively small sample size
Schlair et al, 2012 How Medical Students' Behaviours and Attitudes affect the Impact of a Brief Curriculum on Nutrition Counselling	Class of 2011 of New York University School of Medicine (112-121) Determine the feasibility and impact of a brief medical student nutrition counselling curriculum on nutritional knowledge, confidence, attitudes, and practices. To explore the relative contribution of the nutrition curriculum as compared with own students' behaviours and attitudes on these outcomes.	Title of the nutrition course: ''Primary Care Nutrition Training Program''. It was implemented as a 1-h lecture and one 1-h interactive workshop taught by a registered dietitian. The goal was to build student nutrition-related counselling confidence for patients with obesity and chronic disease. The objectives of the curriculum included an understanding of simple nutrition messages that could be taught using 2- and 3-dimensional visual tools and interpretation of food labels.	They used also the stages of change proposed by Prochaska and Di Clemente (1982) to find out (with 9 items) about their personal nutrition and habits, such as revision of labels, the following of the DNG and willingness to maintain a healthy weight. The authors used this to support that students´ own behaviours are influencing to their nutrition counselling self-efficacy.	Most students felt the need of changing their diet and were very confident about reading food labels. The course made students more knowledgeable about weight loss counselling and on the ability to teach about nutrition. Participants with greater fruit and vegetable intake were more likely to have higher nutrition counselling confidence and the ability to assess diet and dietary knowledge.	Study that brings light to how dieticians can be facilitators of courses related to dietary advice A short nutrition curriculum may have an impact on students' nutrition counselling behaviour regardless of their current own dietary practices.	One medical school, hence no generalizability. The curriculum was brief and no longer-term impact known. No direct patient outcomes were measured. There is also the potential in self-reported data for social desirability among other biases, given that students were aware that they had just completed a nutrition curriculum. It was not possible to explore the impact of important personal characteristics such as age and sex on the effectiveness of the curriculum. Finally, nutrition self-efficacy and treatment expectancies may be difficult to address in the early preclinical years because of the lack of clinical exposure.

Frank et al, 2005 A description and qualitative assessment of a 4-year intervention to improve patient counselling by improving medical student health	Emory University of Medicine, Atlanta, US (7 and 8 on each FGI) To test whether promoting medical student health could efficiently improve patient counselling.	The authors considered Bandura's theory of social learning for implementing their Health Program. However, this paper is focused on obtaining students' views of these programs through focus groups. With regards to the content of the curriculum, this is described in the paper although evaluation, in this case, was made through the focus groups.	FGI with fourth-year medical students that were exposed to the program "Healthy doc". Researchers wanted to assess the effect on their health habits/practices and on their counselling practices. They revised every lecture or series of lectures and heard participants' opinions.	The major themes that emerged for FGI and that were related to the program which encouraged healthy eating habits and with improving their counselling practices were: Listen to the students early, often, substantively, and noticeably; Quietly integrate the curricular activities into curriculum; Provide a strong, science-based, curriculum to complement personal health promotion; Make achievable recommendations, provide collective and personalized data; Keep evaluations brief. Students particularly liked when the school reinforced messages about healthy eating providing a healthy breakfast.	They could obtain the feelings of, for example, resentfulness of students. Some students felt that they were nagged. FGI in this way might teach important lessons about students' perceptions. Although researchers' intuitions about student reactions were correct, they were insufficiently sensitive to how strong those responses would be. This is a critical take-home point for others interested in such an intervention.	It would have been helpful to have conducted FGI earlier, and preferable to have had a purely random sample of students for these groups. They should have conducted FGI in youngest students and randomly selected them as well.
Malatskey, 2017 Leading Healthy Lives: Lifestyle Medicine for Medical Students	All medical students enrolled in 2012 and 2013 at Bar Ilan University Faculty of Medicine, Israel (114). Document students' health behaviours as well as their attitudes toward the role of the medical profession in the delivery of lifestyle medicine.	An intensive lifestyle day course (8 hours) within the framework of the required 3-week public health course. Lectures included an introduction to a healthy lifestyle, exercise, nutrition, and healthy eating, and motivation for lifestyle change. Each lecture was followed by practical, interactive exercises, and a healthy cooking demonstration. The 2-day program includes more in-depth knowledge of nutrition (4 hours)	Students were questioned on body weight and personal health behaviours including diet. The survey was a composite of the Israeli Ministry of Health National Survey of Knowledge, Attitude, and Practices adapted from the UK HENRY obesity prevention program. Attitudes toward physicians' roles in relation to lifestyle medicine were ascertained using 3 items, which were focused on the perceived role of the physician. However, these assessments were related to role modelling rather than attitudes towards counselling	In the beginning of the course, while participants commonly ate fast foods, they also prepared home-cooked food for themselves. After only 8 months of medical school, their lifestyle had deteriorated considerably. Their consumption of fast foods increased (although eating habits appeared to change little in other ways). Overall they considered that this provided lifestyle curriculum was valuable and motivating.	Students received the program well. They appeared to be a population who would be receptive to the lifestyle curriculum, especially as they saw the relevance of lifestyle as part of the doctor's role in caring for patients. Individual help for students is a necessary component. Appropriate investment in the medical school years and instilling "healthy" policies into the medical school environment are essential to maximize the chances of overcoming the epidemic of lifestyle-related diseases, which is dominating health across the world.	The lifestyle program amounted to only a limited proportion of the medical curriculum; with a "single dose", followed by 2 days of academic study relating to lifestyle medicine, which was a short period of time. The way in which they measured eating habits was limited as they could not see any changes over time (they took into consideration only eating vegetables, self-prepared or fast foods as indicators of eating habits.
Perlstein, 2017 Nutrition Practice and Knowledge of First-Year Medical Students	Australia. First-year students enrolled in a graduate entry medical course	The lectures were entitled the "Role of Nutrition in Health at a Population Level" and "Role of Nutrition in Cardiovascular Disease." These lectures generally ran sequentially	Average daily fruit and vegetable, fat, salt intake, and responses were categorised according to the daily guidelines. They also asked participants to	Over half of participants knew the recommended number of serves of fruits and vegetables per day, while less than half of the students met their recommended number of	Most participants knew the dietary recommendations for fruit and vegetables, yet less than half achieved the recommended number of daily servings for fruit and	Inclusion of participants from only one university and self-reporting of dietary practices. Wording of some of the questions were revised over the 4 years to

	Determine the nutrition practices and knowledge of nutritional recommendations for health. To assess the level of discordance between self-reported nutritional practices and knowledge.	over a two-hour allocated class time. Responses to survey questions were recorded anonymously. Five questions were administered in each of the lectures: two on student's lifestyle practices, such as the ones from national guidelines for fruit, as well as salt and fat consumption, cooking habits and alike before lectures on these topics	identify the recommended number of servings or recommended amount of those same foods and nutrients and the impact of consuming adequate amounts of fruits and vegetables on the likelihood of developing a variety of chronic diseases.	serves of fruit per day and less than one-fifth reported consuming the recommended number of serves of vegetables per day. Few students were aware of the recommended daily salt intake but they were aware that salt intake should be reduced. Most participants did not use salt at the table while just over half of the students added salt in cooking.	even fewer for vegetables. While very few knew the guidelines for the daily intake of salt, most students followed the recommendation to avoid adding salt to food at the table. Accordingly, improved patient health outcomes are likely to be achieved if doctors self-reflect on their own lifestyle behaviours and discuss barriers and promoters of healthy dietary practices in their training.	make the questions more challenging which is likely to have impacted on responses in the different classifications over the 4 years. Additionally, not all students attended the nutrition lectures and therefore responses included may not be representative of all the first-year medical student populations.

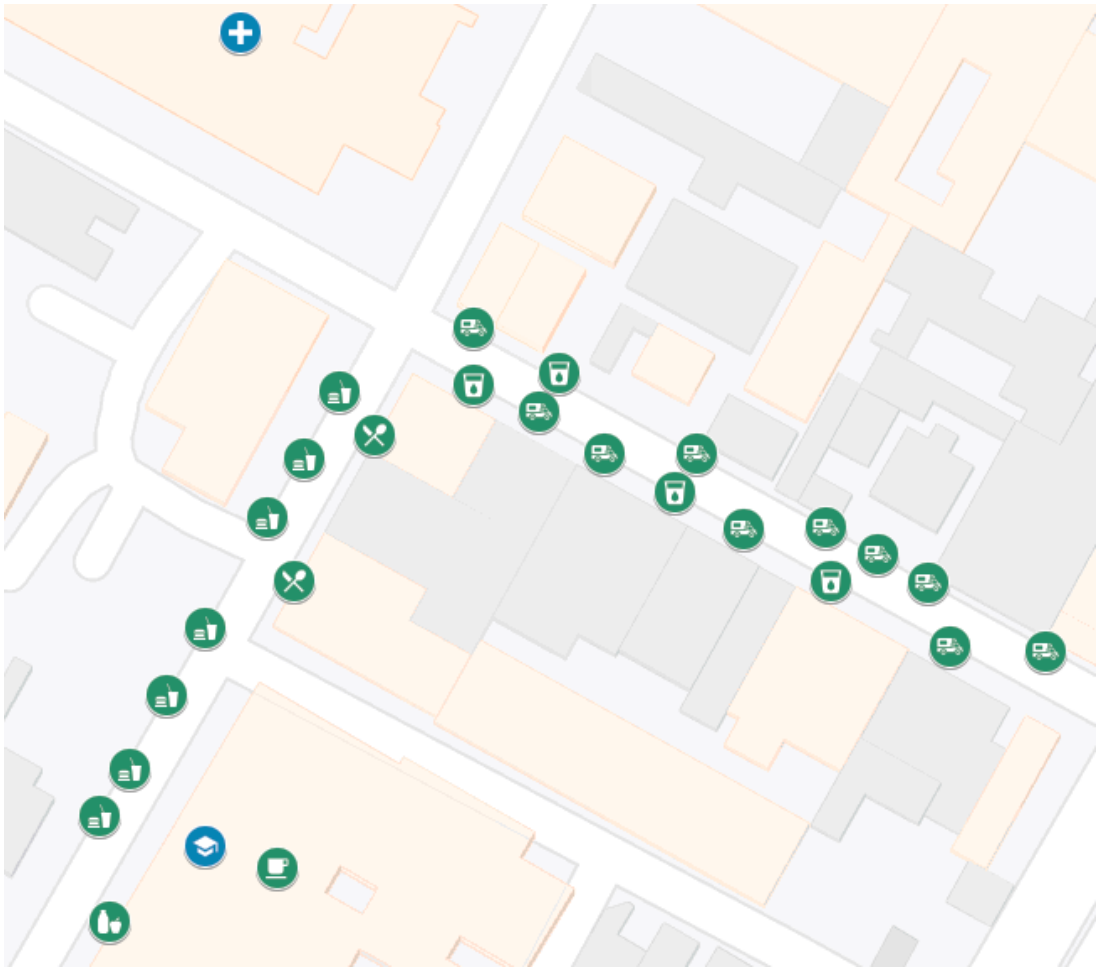
All participants from this cluster were medical students exposed to interventions of a short course, a module, a programme, lectures or workshops. Only a couple of studies included a psychological theory to foreground this intervention. This cluster's studies were conducted within a broad myriad of settings (from the Middle East, the U.S., to Colombia and the Pacific countries). What authors evaluated with the different (normally self-reported) assessments were: eating habits and how medical students related with certain (self-reported) attitudes towards counselling practices about diet. Some cases about lifestyle and disease care/prevention. Only in one case, a study used a qualitative tool to obtain students' views about the results of a program that was designed for them to promote a healthier overall lifestyle as well as better counselling practices among medical students (Frank et al, 2005).

Appendix 5. Maps of the food environment near the study settings

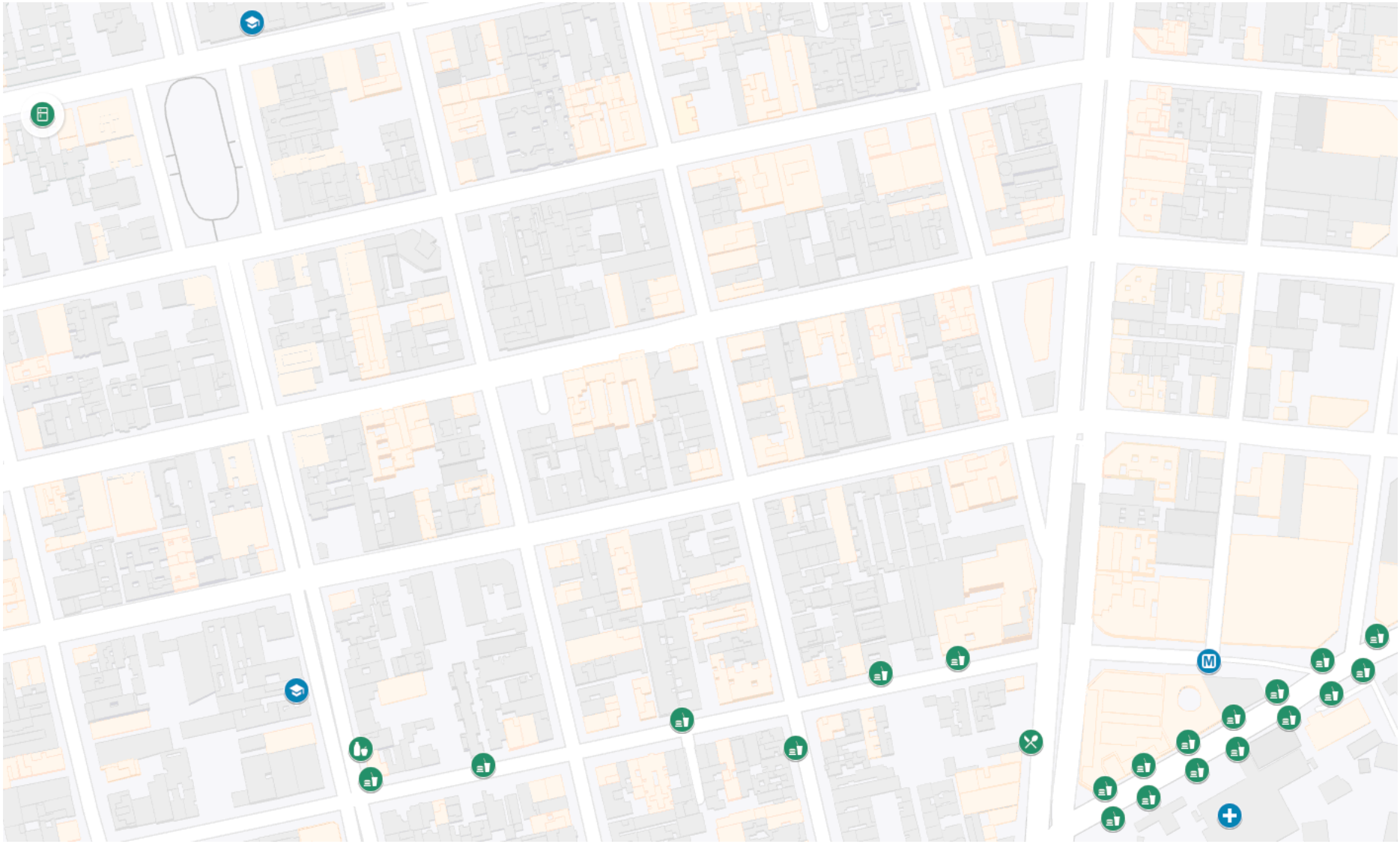
Legends

	Locale
	Cafeteria
	Street Vendor
	Restaurant
	Student Food Stand
	Groceries
	Food Truck
	Food Vendor Inside a House
	Market
	Pizzeria
	University
	Hospital
	Metro

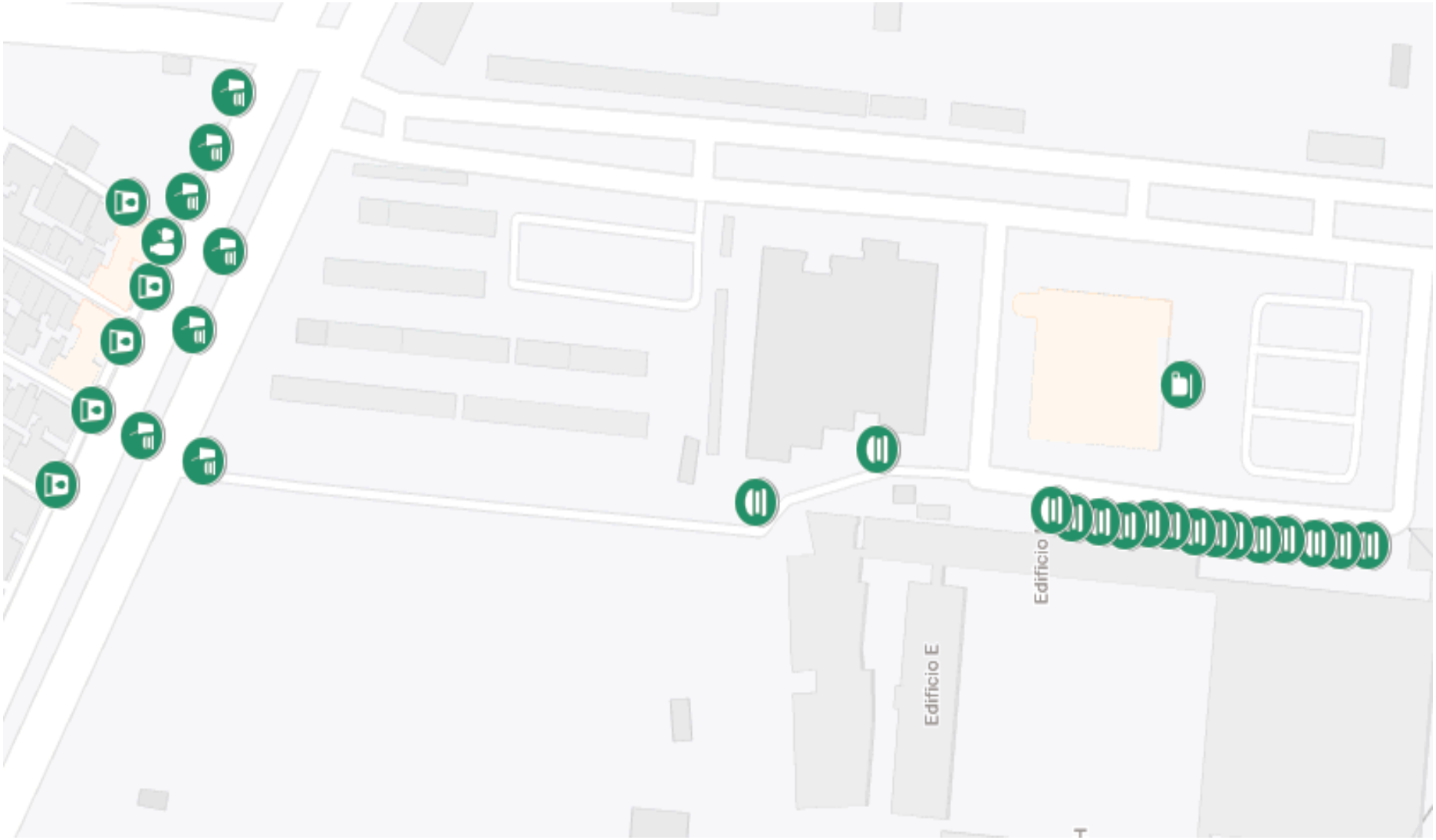
State of Puebla, Public University

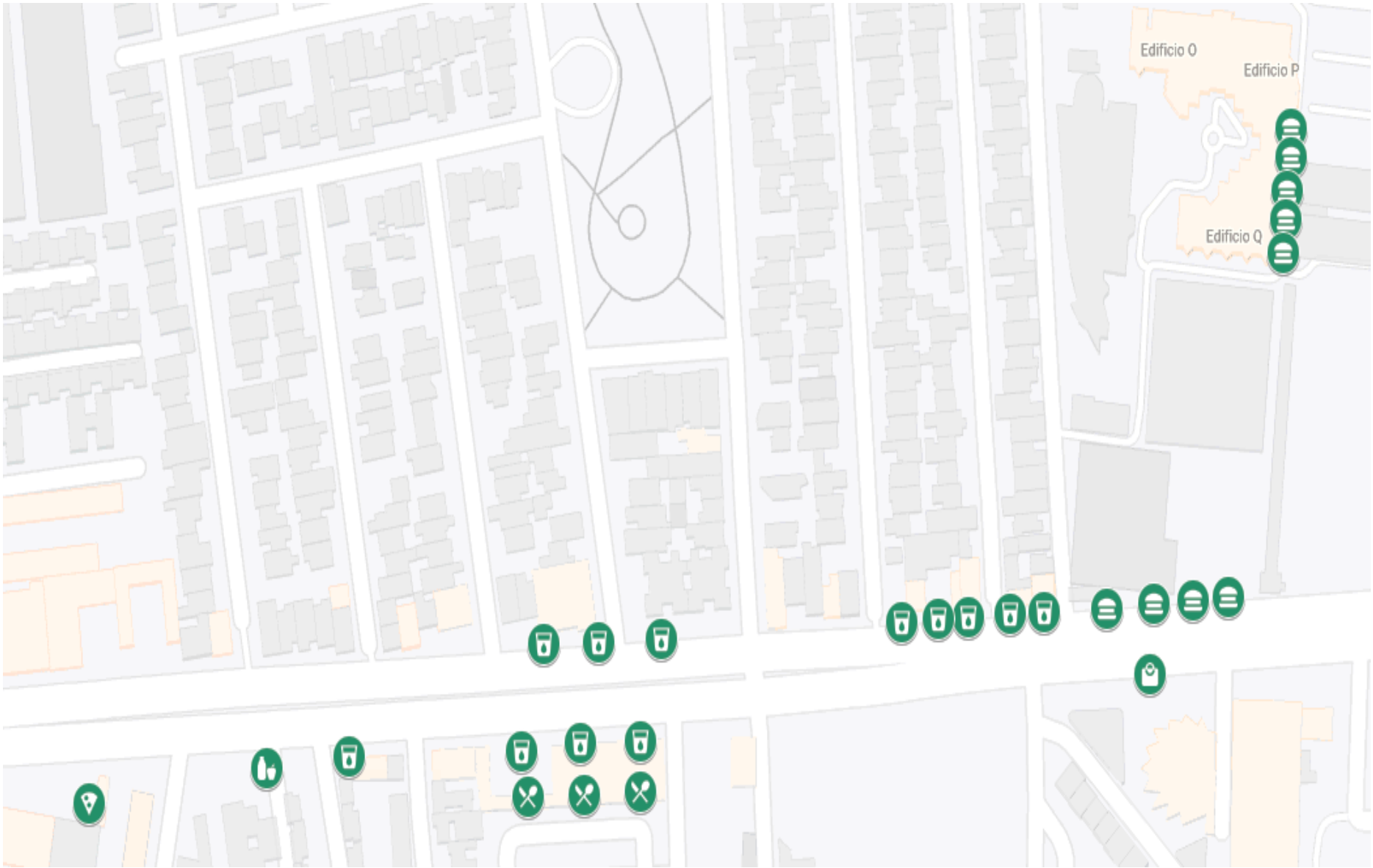


Mexico City Private University



Mexico City, Public University. North entrance and external areas (first image). South entrance and external areas (second image)




Edificio O
Edificio P
Edificio Q

Appendix 6. Interview guides

Generic guide for FGI and Interviews.

Further questions are in the specific FGI and Interviews guide

This general guideline enhances the focus or recognition of students' foodways (based in Glanz, et al., 2008 and Ritchie et al., 2013). Although some questions drawn in the key studies were used, these were quantitative instruments (surveys, questionnaires) with closed answers for the most part. Some mediating factors mentioned in a systematic review (Kelly et al., 2017) that looked at how health behaviours affect nurses; health promotion practices, were also considered to create this outline. These factors were setting/context, training and skills, and guidelines. Although psychological theories have helped to explain some factors related to the lack of healthy eating practices and so on, these theories can also guide the kind of questions I made.

It is taken for granted that dieticians discuss dietary issues with the patient, such as food selection, culinary techniques, diet balance and so on (NOM-043, 2012). With them, the topic is about the characteristics of the dietary advice they offer. Though, since doctors or nurses do not have the primary function of discussing nutrition with patients (NOM-019, 2012), they might or might not discuss foodways or nutrition with patient, therefore FGI with them is more exploratory.

The session general structure followed this structure:

1. Introduction for the researcher and the topic as well as contextualise the setting
    a. Introduce myself and the study. Explain confidentiality and anonymity. Explain the recording, consent issues, and nature of the discussion. Refreshments were available. Check for any further questions.
    b. Background details of participants: confirm they are all studying and practising within a primary care setting. Know more about their places of origin and from where about they travel to study at the university.
        i. Make an idea of discursive and conversational style of participants
2. Questions for ice-breaking including preliminary information such as definitional or conceptual questions.
    a. Introduce participants to the topic of foodways related to dietary advice.
    b. Ask conceptual questions carefully to avoid that they can feel is a test and to avoid that the discussion influences their thoughts about definitions
        i. Foodways/ food choices and important features. The word foodways was not be used since students might be more familiar with the term of food choices and is important to avoid technical jargon.

ii. Dietary advice/health education process and how do you become aware of this?

3. The core component of the interview. From broad to narrow questions, from circumstantial to attitudinal and explanatory questions. See below for specific questions.
    a. Questions about experiences and circumstances are asked prior to the questions about motivations and attitudes. Burgess (2004) and Spradley (2016) recommend to ask 3 types of questions:
        i. Descriptive questions usually provide statements as answers
        ii. Structural questions are for knowing how the participants organise their knowledge
        iii. Contrast questions give the chance to provide clarification or comparison of the potential scenarios or situations within a topic
    b. Allowing enough time to make sure substantive questions are addressed
4. Potential questions to look for the future, suggestions, and summary
    a. Wind the discussion down towards the end. Move on from any difficult feeling in the group.
    b. What they may suggest that could happen or improve as a result of that discussion.
    c. Summarise what the researcher perceived about the students' attitudes and experiences. Check if anything important has not yet covered.
5. What might happens next:
    a. Follow with individual interview (if applicable)
    b. Contribute with links, pictures or any element related with the students' food choices

<u>Focused questions (core component) following a coherent order:</u>

Foodways

How different is the way or food you eat at the moment from the one you consumed in your place of origin and the place you were raised?
What food do you normally eat? Why do you choose this food?
Would you prefer to eat other foods? What types of foods? What stops you from eating these?
What kind of foods have lead you to have health problems?
Which factors or issues can affect the food you choose to eat?
Have you ever used foods as medicine or for a therapeutic purpose? If so, what kind of foods do you prefer?
Have you ever use food to motivate you for doing something?

What type of foods do you consider as temptations? Why do you eat or avoid to eat those? How do you feel about eating this? Do your friends or people you know eat them?

How does price affect what you decide to eat? Why do you not eat because of its price? What do you eat because is affordable?

What kind of information (if you do this) you look about the food you eat? What is the influence that supermarket promotions have on your food choices?

Why do you eat in the places you usually eat? To what extent the locations of the places to eat influence your decisions about what to eat?

What foods do you eat on special occasions? Can you describe these occasions or events?

How different is the food that you eat when you are alone and when you are with your family/friends/partners/colleagues? How do they have influenced the way you eat?

Does your school offer you dietary advice? What do you think of it? Have you ever been screened for a disease like obesity, diabetes and so on in a health service?

Some probing questions: What makes you feel this way? What barriers do you see in what you are saying? What do others think about this idea? Can you tell me more about this?

Dietary advice

What do you think your role is by offering dietary advice to your patients?

What would be an acceptable way of providing dietary advice to patients?

How serious do you recognise food as an important topic to discuss with the patient? Do you think your own food choices affect the dietary advice you feel able to give?

How capable/confident/knowledgeable they think they are to communicate and have a food conversation with the patients?

What do you think about patients that follow or do not follow dietary advice? How much responsibility do you think they should take for their own food choices?

If you know it is difficult for you to follow similar advice that the one you are offering to your patient, why you offer that counselling?

How capable/confident/knowledgeable do you feel to recognise when the patient's food choices are affecting their health?

What are the norms/rules/guidelines that you feel you should follow regarding food and eating? What is the difference between this application to yourself and to your patient?

Which external factors can prevent you from interacting with the patient regarding food/diet?

How do you think that the media might impact your patient's belief about food as a source of health?

What are the factors related to the food/diet that you advice to enhance and/or promote patients compliance?

How do you promote discussions about food/diet with your patients as well as their involvement?

To what extent do you involve your patients in their food/diet planning?
How do your patients react when you want to discuss food/diet with them??
How would you describe the response that your patients have when discussing their food choices or/and diet?
In what sense is different the advice you offer to someone that belongs to a high socioeconomic status and to someone that belongs to a lower socioeconomic status?

- *Probing: elicitation questions to prompt precise and deep answers:*

How would you feel about the idea of…?
What are the plusses or minuses of your X strategy when counselling a patient?

The questions that were considered for a specific type of interview are described in each guide. The latter also means that this is an iterative process that might evolve in the field. In the end, the researcher asked if the participant would like to add something that has not been discussed previously.

FGI and Semi-structured Individual Interviews Generalities

Focus group guide

Prior to FGI, the food recall was applied to each participant.

Checking for practicalities:
Characteristics of the venue: building, location, room, physical arrangement, availability of second room if needed. Management of: refreshments, incentives, other people who come with the participant, other observers such as directive or teaching staff (which should be avoided at all costs) and equipment to record. Cold food and soft drinks were available in the room from which they can take anything before and after the focus group. When finishing the focus group, they were invited to send me pictures about their food/diet and everything surrounded it, for instance: visits to the supermarket, meetings for eating, cooking practices or anything they would relate with food/diet. This latter has the aim of enriching the data and complement the field notes (Hyden & Bulow, 2003).

All questions need to be contextualised (Ritchie et al., 2013), since these need to address the students' concerns and give voice to their views, perceptions, and experiences. It is important to have a focused topic guide to avoid vastness and imprecision of information. In this case, the emphasis of FGI was food/diet and only for lesser time, about their counselling practices related to diet.

One of the greatest challenges would be to find the balance between key and probing questions, which depend on the group. It is always important to allow the opportunity for a deeper conversation (interview) with participants. It is important to focus the topic in a FGI because although there is information about other students' food/diet, there is almost nothing about their relationship with dietary advice.

As explicit and specific as possible, some examples of questions are provided:

- What do you eat most of the time, buy most of the time, and how and when do you consume it?
- What do your colleagues eat normally when:
    - They are stressed/ or at medical setting (hospital, etc.)/university?
- Impact of your status as a healthcare student on your food choices/diet
- How do your food choices/diet have changed throughout your experience as a healthcare student and your period of practising with patients directly?

Individual Interview guide

In-depth interview: emphasis on dietary advice but also foodways. Questions based on what interview says seeking clarification and probing for details. The first encounter with participants should allow to learn more about them, field notes are important after every interview. If there were inconsistencies between notes and recordings, it is important to seek clarification with participants (Chen, 2016). To avoid the (positive or negative) stimulus that I might represent to participants (Pelto & Pelto, 1978), a neutral stance was sought by exploring my role in the research (Maxwell, 2012).

Key features of interviews: Structure with flexibility, interactive, explore below the surface, assign importance to the language (verbal and corporal). Consider types of questions could be about participants': experience, opinion, feelings, knowledge, sensory, background. It is important to follow strategies to elicit information from participants during the interview, such as encouraging noises, reflect on the comments of the informant or probing an idea and in which moment or finally, introducing a new topic.

i) Aspects of foodways processes considering food diary

- Details of the moment, the multiple forms and the characteristics of their food choices/diet (timing, frequency, food list, location, expenditure- how they decide how much to spend-, places if they keep track of what they eat)

- Explore reasons for their food choices/diet including factors, or persons that have influenced them (motivations/attractions)
- Impact of food choices/diet on social life, relationships, use of other substances such as drugs (medicines) and alcohol
- Exploration of potential health problems that might have dietary aspects as risk factors

ii) Conditions and characteristics of dietary advice Under what circumstances the dietary advice is offered to patients?

- How is the approach when discussing food choices/diet with patients?

- How do you, as a healthcare student, decide if the patient has a problem with their nutrition, food habits or with the way they eat?
- Are there some assumptions/preconceived ideas you have towards counselling or giving dietary advice to the patient? If yes, then name a few examples
    - For probing: how much time and do you spend on asking the patients the personal resources or circumstances of their food choices/diet?

iii) Relations with the way they educate/inform and the way in which they are educated/trained

- To what extent do you play a role for your patients and in which way? (image perception, congruence, knowledge source)
- In which moment you include dietary advice as a part of the consultation?
- How would you feel if your patient seems to have better knowledge about his/her disease than you have as well as knowledge of what she/he needs to eat to improve his/her symptoms or quality of life?
- In which way does the clinical setting or exposure enhance or promotes your motivation to:
    - Apply knowledge into practice?
    - Improve your own health behaviours?
- How do you currently facilitate dietary changes in the patients by offering advice or offer a consultation with a specialist? (in case they are not dietician)

Thanking the participant. Reiterate confidentiality. Specify that they are welcome to contact the researcher for further questions at a later date if they wished.

Tips for potential challenges: give appropriate verbal and non-verbal feedback to participants. Things to avoid interruptions, distractors, jumps of subject, temptation to counsel interviews or summarise too early, presenting own perspective, write notes in the moment of the interview.

Appendix 7. Information sheet and consent form

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

PARTICIPANT INFORMATION

School of Medicine, Faculty of Medicine & Health Sciences

Project Title: Foodways and dietary advice. A Qualitative study.

Researcher: Abigail Tronco Hernandez [ntxyt@nottingham.ac.uk]

Supervisor: Stuart Nairn [nqzsn1@exmail.nottingham.ac.uk] Nichola Ashby [nqznv@exmail.nottingham.ac.uk]

Ethics Reference Number:

This is an invitation to take part in a research study about the students' current practices and habits regarding their practices within a clinical setting. This information is designed to tell you what it will involve.

Your participation is voluntary, and you may change your mind about being involved, or decline to answer a particular question. You are free to withdraw at any point before or during the study. Withdrawal does not require a reason. Once you have completed and submitted the questionnaire it is not possible to withdraw the data because we won't know who you are.

What is the project about?

We want to find about your food choices and about your experience with the patients you have advised. We also want to know some of the challenges you might be facing as a student that is currently practising within a clinical setting.

Who is being asked to take part, and why?

Students of health sciences such as medicine, nursing and nutrition are able to participate as long as they have learn about nutrition and also have practised their knowledge and skills in primary care settings (clinics preferably, but hospitals too).

What will I be asked to do?

You will be interviewed for approximately one to two hours and a pseudonym will be allocated to you to preserve your personal data at all times

Will the research be of any personal benefit to me?

Students like you would be likely to be benefit in the nearer future. It is believed that describe and express your opinions about a topic you might feel listened and you might wish to say how things might work for your benefit.

What will happen to the information I provide?

Confidentiality and anonymity are prior aspects to us as researchers. Only the main researcher will have access to the obtained data. Participants will not be indirectly or directly identified since demographic data will not be asked. The data will be store with password in the personal files of the researcher and will be destroy 7 years after. No software will be used to transcribe, code or analyse the interview. If some sentences you said are relevant for the research this will be potentially in a publication or a report but always protected, but if you do not wish this, please do tell us.

What will you do with the data?

This is a PhD project that has been approved by the University of Nottingham. A summary of the findings will be write for academic purposes and potentially teaching other students.

At the end of the project, all raw data will be kept securely by the University under the terms of the Data Protection Act. The data will not be kept elsewhere.

If you have any questions or concerns, please don't hesitate to ask. We can be contacted before and after your participation at the above address.

THANK YOU FOR YOUR PARTICIPATION

If you have any queries or complaints about this study, please contact the student's supervisor in the first instance. If this does not resolve the query to your satisfaction, please write to the **Faculty of Medicine & Health Sciences (FHMS)** School Ethics Officer: (kristian.pollock@nottingham.ac.uk), who will pass your query to the Chair of the Committee.

CONSENT FORM

(Version 1 date 01/09/17)

School of Medicine, Faculty of Medicine & Health Sciences

Title of Study: Food choices and dietary advice. A qualitative study.

REC ref: ***(to be added after approval given)***

Name of Researcher: Abigail Tronco Hernandez Supervisor: Stuart Nairn

Name of Participant: **Please initial box**

1. I confirm that I have read and understand the information sheet version number 1 dated **01/09/17** for the above study and have had the opportunity to ask questions. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without my medical care or legal rights being affected. I understand that should I withdraw then the information collected so far cannot be erased and that this information may still be used in the project analysis. ☐

3. I give permission for that Abigail Tronco can have access to collect, store, analyse and publish information obtained from my participation in this study. I understand that my personal details will be kept confidential. ☐

4. I understand that the interview/focus group* will be recorded and that anonymous direct quotes from the interview/focus group* may be used in the study reports. ☐

5. I agree to take part in the above study. ☐

Name of Participant	Date	Signature
Name of Person taking consent	Date	Signature

2 copies: 1 for participant and 1 for the project notes

Appendix 8. Food elicitation

The provided questionnaire to students in FGI was based on Schaefer et al. (2016), a study that investigated the healthy foods and the meanings assigned to this but also on Alkon (2013) who looked at the foodways of the urban poor. The aim was to obtain a brief description of what the participants ate the last couple of days, preferably one weekday and a weekend day because diversity might be found there (Bridle-Fitzpatrick, 2016). Some key questions were times and places of consumption as well as descriptions of a typical consumption pattern regarding their regular family and social traditions (Bridle-Fitzpatrick, 2016).

24-hour recall

Date	Time	Food	Quantity	Preparation	Place	Comments (companions, special occasions)
Weekday	Morning Midday Between meals Afternoon Evening					

Specific questions that helped to elicit more information about the 24-hour recall or the food diary.

- What food did you select/purchase, buy and consume yesterday? What motivates you to eat this?
- Where, when and how? What are the restrictions that you find to eat what you like for example, when you want and how you prefer?
- What do you eat? Is it the same that some other people eat?
- How do you get what you eat? Where do you make your purchases to the food you normally consume? How did you learn what to buy? Why do you prefer "x" place?

- How do you prepare this? How much time you use prior to eating this? Where do you cook or prepare normally? Do you receive some help or is it not an activity you usually do? If someone else prepares what you eat, is there a special way you ask for preparation? Do you ever wonder or worry about who is cooking your food?
- How often do you eat this? (especially regarding weekends)
- How do you eat this? Rituals or people who you gather with
- What is the regularity with which you consume such "x" food and how many ways do you prepare it or prefer it?

For participants for in-depth semi-structured interviews, food diaries were filled, considering similar questions for both recalls obtaining foodways. The format was the same although written during 2 weekend days and 3 weekdays, with more details (pictures, extra notes, recipes when relevant, etc.) than the single recall. This activity needed some reminders to the participants (Galvez et al., 2017).

Appendix 9. Brislin' principles for translation back-translation.

The translation of interviews considered the principles that Richard Brislin described in 1970. Questions contained in the 24-hour dietary recall were translated from Spanish to English considering the standardized questions for the Latin-American population (Ferrari, 2013). In this case, the Brislin principles do not apply. Now, the questions for the interviews that were asked by the researcher were translated to Spanish and then back to English as if their first version in English did not exist. When having the data, the back translation to English was also cross-checked with a personal friend who is Mexican and a dietician.

Before entering the field, questions were tested with two volunteers that belonged to Latin American countries, to whom English was not their first language. This latter happened with a personal friend and a colleague. The interviews were conducted in English and cross-checked with supervisors. After this, bearing in mind connotations might be different for Spanish speakers, modifications to the questions were done considering the comments of interviewees.

Benefits

- The grammatical structure and various words are quite similar between English and Spanish
- Words with similar frequency usage were carefully used when translating the first interviews and the excerpts

In sum, techniques for back translation, as well as criteria for equivalence, were established according to Brislin (1970) when translating the first focus group and two interviews and finally, when translating the excerpts used for the final version of the thesis. However, it was also important to consider capturing the silences, pauses, fluctuations in volume and disconnection of the speech in the participants (Crabtree & Miller, 1999).

Appendix 10. Reflexive notes before entering the field

The analysis begins before data collection starts (Crabtree & Miller, 1999), therefore, my reflections and previous ideas about the phenomenon need to be clarified before entering the field (Thorne, 2008). I needed to also be reflexive on how my personal characteristics affected my outlook of the research problem, especially as an insider. A realist stance requires identification of values that are mine and that I should not have to project to the environment (Maxwell, 2012). Since I am using a retroductive framework (CR), I shall look at the evidence that challenges my first assumptions and keep a sceptical attitude (White, 1997) even as an insider, as well as question the obvious, challenging even my background professional knowledge.

Reflexive diary. October 2017

My role in the field is as a researcher not as a dietician, the aim is making potential participants feel comfortable with what they will contribute. If the lecturers explain the project on my behalf for recruitment purposes, students might feel forced to participate therefore I would try to separate myself from academic staff. I will not assess or judge in any way the dietary patterns or foodways that I hear or read from students. My clinical experience could guide the way I discuss foodways with participants (in a deeper way) and the analysis after the interview but it will not determine any potential judgemental attitude during recruitment or interviews. It will be useful to consider some power issues that might arise when conducting FGI in the academic setting, in case students think that, as a former lecturer, I plan to assess how healthy/unhealthy their foodways are. With regards to the pictures that participants might provide for the research in their food diaries, these will need to have certain characteristics that help preserve the anonymity of third parties (Fleury et al., 2009), such as avoid faces, names, and sensitive information/images.

As an insider, I share cultural, linguistic and national heritage with participants (Ganga & Scott, 2006). However, even as insider, participant observation might be necessary to become more familiar with the community (Ganga & Scott, 2006). Provided that I understand how the field and my research participants can influence me, constant reflexive notes were written, to add deep insights to the research process carried out (Thorne, 2008).

Appendix 11. Curricular analysis of the study settings

NUTRITION

FGI- Private School in Mexico City

This degree develops a broad range of subjects related to Nutrition are the ones related to assessment and education are offered after the 3rd year of studies. The curriculum is completed after 4 years of theory, one year of practice, and one year of social service (after the completion of the complete theoretical subjects). Participants included in the present research were studying and practising in their 4th year, which meant that they already were taught subjects such as Nutrition and Chronic diseases, Assessment and planning of dietary regimens in pathologic conditions, and supervised practices (at Clinics and Hospitals). This last one seeks that, form to a holistic point of view, dieticians can assess and propose approaches to detected needs from different populations (rural and urban), basing strictly on methodology and ethical approach to the research population. They work with communities in the countryside of cities based on Mexico's central areas. They are actually based their research and proposal, which covers the complexity of, for instance, the obesity epidemic, in a UK source (Butland et al., 2007):

During their whole education, they only have one subject called Education and Communication in Nutrition, one subject on foundations on psychology and that is all that at a glimpse could be considered as part of the training dieticians take to offer DA.

These students normally practice at their workplace/placement in the last year of their studies. A placement then is assigned to them and one day per week, they need to attend for the whole morning. Students that attended the FGI were practising at an institutional (government) clinic and a hospital.

Individual interviews: Public University State of Puebla.

Their curricula seemed more complex than the one in the private school, therefore one of the heads of the Nutrition degree helped me clarified the subjects related to DA. Participants had completed their whole curricula by the time they were interviewed. One of the areas that this curriculum has in Public Health, includes a subject called Health Education, though this stakeholder explained that it was more inclined to address communication issues and campaigns because it was more community focused. They also took a subject called Clinical psychology. It is worth highlighting though that this was a degree merely focus on the clinical population (hospitalised patients), however, it is interesting to note that one of the first semesters included Nutrition Anthropology, although details were not given.

Both curriculums contained one to two psychology-related subjects, which explains why dieticians considered this as an important aspect. With regards to their practices, this cohort of students was about to begin their social service and was waiting for placement confirmation. During their last semesters, they attend during a short period to a hospital for supervised practices since this degree completely focused on hospitalised patients, rather than clinical or ambulatory ones.

NURSING

FGI- Public School at State of Puebla

Due to an administrative change of staff, I could not get access to Nursing curricula from the head from the school directly but had to do it online since this is a public university and therefore curriculum information has open access to their website. This was also the case for the Autonomous University in Mexico City, in which I interviewed nurses individually. The curricular area of Health sciences (for Puebla) contained a subject in Nutrition and the Area of Social Sciences included Mental Health and Human Psychology as subjects. Although the stage in which students undertake this was not specific, my participants only had one more semester to study. After one month from the interviews, two of them were doing one semester abroad (Spain and Peru), with its corresponding practices. The third participant already finished all theoretical subjects and was going to rotate for the practical ones. For the last two semesters at least, participants reported to attend to clinical environments and rotate every two weeks to a different one, which means they attend to those at least twice per week for 2-3 weeks.

II – Autonomous University in Mexico City

With regards to the Autonomous University, it seems crucial to highlight that the profile of graduation, which talks about the performance of the nurse within different scenarios, and in this they included "culture dissemination". The curricula also mentioned that it was expected the graduate to have an awareness of social and professional issues with a critical view to guarantee high-quality nursing care. Their teaching-learning units, however, do not mention any terms related to nutrition, alimentación, diet and so on, these are only related to healthcare in the different stages of growth in human beings, as well as in stages of the disease, community, and administrative services.

A noticeable aspect is that a nurse is expected to be part of a multidisciplinary healthcare team and is worth mentioning that a part of the applicants' profile mentions having empathy tolerance and equity.

MEDICINE

FGI and II form Autonomous University

Participants belonged to one of the last terms of their 4th year of studies (their curricula is estimated to last 5 years). The general objective in the curricula is to maintain a permanent interdisciplinary approach and also to perform preventive, collective and individual actions that prioritise health promotion more than a curative focus. Even when the curricula is mentioned that medics are the first contact for healthcare, and maybe because of this, the curricula stressed a preventive focus in their objectives.

Their graduate profile includes a compromise with scientific-based information as well as with referring patients in due course and with always practice firmly seated in ethical and humanistic principles. The curriculum also stressed in maintaining a multidisciplinary work throughout, however only a couple of participants mentioned the importance of doing so. No nutrition-related training is mentioned in the curricula. Every learning-teaching unit has its mention of considering the bio-psycho-social human being to address any healthcare issue.

Participants from the two disciplines in the Autonomous University were practising permanently each term (for 6-8 weeks), especially medics. These last ones practiced in the mornings (except for one day in the week) and attended seminars and classes during afternoons. Nurses attended in groups or pairs to the allocated setting, with administrative focus (clinical or community-based) because that was the main module subject of their last term in their studies. However, these last students rotated every month to a different setting.

Highlights and conclusions

Shown in the main text (chapter five).