University of Nottingham
UK | CHINA | MALAYSIA

Self care in Oman: public and healthcare professional perspectives

Submitted by
Muna Arif Al Juma

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

June 2017

Acknowledgment

This thesis is dedicated to the memory of my father, Arif Al Juma; who always encouraged me to do a PhD. and I know that if you lived to this moment you would offer all the support to make it possible. I miss you every day.

I am very thankful to my husband Ahmed for the understanding and patience that he has shown to me, and for taking very active interest in my work. I also thank my wonderful children, Ibrahim and Mohammed, they made me proud of the understanding they have shown when I was away during my study, and for those holidays when I was working on my home office instead of playing games. I consider myself very lucky for having them in my life. My special gratitude to my mother Khadija for her affection and kindness towards me, for looking after my kids, and for her constant prayers. I would also like to extend my thankfulness to my brothers and sisters, including my in-laws for their immense support and encouragement.

I am gratefully thankful to my supervisors Claire Anderson and Matthew Boyd, whom offered their expertise, understanding, and support made it possible for me to work on a topic that of great interest to me. Thank you for your guidance that enlighten me to surpass the profoundness I experienced during my PhD journey. I am honoured to work with you.

I further extend my personal appreciation to all the participants involved in this study for their time and for sharing their experiences and thoughts. I would also like to thank Sara, Wisal, AlKhansa, and Ahmed for their assistance with the transcribing and translation process. I would like to thank all the affiliates, staff and administrators at the division of pharmacy practice and policy for support and guidance during my PhD study. I also thank my PhD colleagues for the fun times during PhD journey, and for the friendliness and encouragement that they had given me. My special thanks to Asma, Jane and Lydia for being the supportive companions during the writing phase.

I would like to thank all my friends and relatives who always expressed their support and never forget me in their constant prayers. I would like also to thank Rosemarie for taking care of my children very well. Thank you to all who without I might not have been written this thesis and to whom I am greatly obligated. I may forget some between but I would thank everyone I know and everyone I met that had a pleasant imprint in my PhD journey.

Above all, I would like to thank Allah, the Almighty, for being with me always and providing me with the ability and strength all the way to complete my doctoral study.

Abstract

Self care and self-medication are a vital component of modern healthcare. Pharmacists can play an important role in supporting people's self care of minor ailments, from advising on self care and supplying non-prescription medicines to identifying the need for GP referral. The available literature about self care and the role of community pharmacists in Oman is scarce. A knowledge gap was identified in areas related to people's experiences of self care and self-medication, and how they utilise the healthcare services available when responding to their minor ailments. It is also not clear how and when the public utilise community pharmacy or how pharmacists contribute to patient care within the primary care setting. This study aims to identify the factors that influence the self care of minor ailments in Oman by exploring the perceptions of the public and healthcare professionals.

A qualitative approach was used to answer the research question. Two groups of subjects were interviewed: people recruited from public places e.g. shopping centres (phase one), and pharmacy staff and general practitioners working within primary care (phase two). The pharmacy staff and general practitioners were recruited from both the public and private health sectors. Data were collected using semi-structured face-to-face interviews. The data was analysed thematically using the principles of constructivist grounded theory. Data management and analysis were performed using NVivo®, a qualitative data analysis software. Results from the two phases were triangulated to provide a better understanding about the factors influencing self care of minor ailments in Oman.

Individual interviews were conducted with 21 members of public, 14 general practitioners and 17 pharmacy staff. Three main themes were identified that influenced the self care of minor ailments in the Omani health system: individual knowledge, beliefs and attitudes; communication and relationships; and the healthcare system. Individual factors that were

identified to influence the public illness behaviour and the healthcare professionals' approach to manage minor ailments were: attitudes to medicines; understanding of self care and minor ailments; and attitudes to self-medication. Attitudes to pharmacy staff; poor communication and language barriers; and interprofessional relationships had an impact on supporting self care and accessing the community pharmacy for advice. Role responsibilities; standard and quality of practice; and information support and health literacy were the three health-system-related factors that influenced self care of minor ailments.

This research represents the first holistic understanding of the factors that influence self care and management of minor ailments in Oman, including the opportunities and challenges for the pharmacy profession in providing patient care. This conceptual model could help in adapting a comprehensive approach to effectively address factors related to optimising the self care of minor ailments and improve utilisation of healthcare services. The three main themes influencing self care in Oman have highlighted a number of important implications for future practice and research to improve primary healthcare provision and the role of pharmacy profession in patient care.

List of Publications

Oral Abstracts

Peer-reviewed

1. Al-Juma M, Anderson C, Boyd MJ. Factors affecting self-management of minor ailments in Omani healthcare. *International Journal of Pharmacy Practice* 2017; 25 (S1)**,** 4-39.
2. Al-Juma M, Anderson C, Boyd MJ. "fever means antibiotic." The Omani public's attitude to the use of antibiotics for treating the common cold. *International Journal of Pharmacy Practice* 2016;24(S2):4-32.

Non-peer-reviewed

3. Al-Juma M, Anderson C, Boyd MJ. "I don't know how to advise about piles medicines": Language barriers and medicines counselling in Oman. Accepted at *Pharmaceutical Care Conference*, 2017 in Muscat (Oman); Oral presentation. Accessed 9 May 2017 Available at: http://pharmacareconference.om/category/presentation-abstracts/page/3/

Poster Abstracts

4. Al-Juma M, Anderson C, Boyd MJ. Beliefs about medicines and their influence on the self-management of minor ailments in Oman*. International Journal of Pharmacy Practice* 2016;24(S2):33-60.
5. Al-Juma M, Anderson C, Boyd MJ. Omani public perceptions and attitudes toward medicines in the management of minor ailments. *International Journal of Pharmacy Practice* 2016;24(S2):33-60.
6. AL-Juma M, Anderson C, Boyd MJ. Consulting community pharmacist in minor ailments: public's attitude in Oman. Presented at *International Pharmaceutical Federation,* 2015 FIP Congress in Düsseldorf (Germany)

Table of Contents

ACKNOWLEDGMENT ..... **I**

ABSTRACT ..... **II**

LIST OF PUBLICATIONS ..... **IV**

TABLE OF CONTENTS ..... **V**

LIST OF FIGURES ..... **VIII**

LIST OF TABLES ..... **VIII**

LIST OF ABBREVIATIONS ..... **IX**

LIST OF DEFINITIONS ..... **XI**

CHAPTER 1 INTRODUCTION: BACKGROUND AND SCENE-SETTING **1**

1 General Overview **1**

2 Research background **4**

2.1 Self care and self-medication 4

2.2 Self care in the health system 6

2.3 Self care of minor ailments 7

2.4 Pharmacists and self care 9

2.5 Patients and self care 10

2.6 General practitioners and self care 13

2.7 Self care and its implication for pharmacy in Oman 15

3 Country background **19**

3.1 Oman country profile 19

3.2 Oman healthcare system 23

3.3 Pharmacy in Oman 35

4 Study Rationale **45**

5 Aim and Objectives **46**

CHAPTER 2: METHODOLOGY AND METHOD **47**

1 Introduction **47**

2 Methodology and Epistemology **47**

2.1 The philosophical paradigm underpinning this research 48

2.2 Qualitative research 50

2.3 Rigour and qualitative inquiry 59

2.4 Translation consideration 63

2.5 Ethical consideration 66

3 Method **67**

3.1 Research design and tools 67

3.2 Sampling and selection....68
3.3 Data collection....71
3.4 Data Management....73
3.5 Translation process....74
3.6 Data analysis....76

CHAPTER 3: THEME 1: INDIVIDUAL FACTORS, KNOWLEDGE AND BELIEFS....79

1 Results Overview and outline....79
1.1 Participants' details....79
1.2 Results presentation....79
1.3 The main findings....81
2 Introduction....84
3 Results....85
3.1 Understanding of the general concept of self care....85
3.2 Understanding of minor ailments....87
3.3 Attitude to self care of minor ailments....90
3.4 Attitude to medicines....94
4 Discussion....113
4.1 Understanding and attitudes toward self care....113
4.2 Cultural knowledge of illness....113
4.3 Knowledge and perceived attitude toward self care of minor ailments....116
4.4 Attitude to medicines....117
5 Conclusions....122

CHAPTER 4 THEME 2: COMMUNICATION AND RELATIONSHIPS....123

1 Introduction....123
2 Results....123
2.1 Attitude to pharmacy profession....123
2.2 Barriers to effective management of minor ailments....127
2.3 Physician and Pharmacist Inter-Professional Relation....134
2.4 Extending the role of the pharmacy profession....138
3 Discussion....142
3.1 Attitude to pharmacy staff....142
3.2 Appropriateness of community pharmacy consultation....145
3.3 Communication and language barrier....147
3.4 Multidisciplinary team and healthcare....149
4 Conclusion....150

CHAPTER 5 THEME 3: SYSTEM-RELATED FACTORS....151

1 Introduction....151
2 Results....151
2.1 Organisational setting and practice....151

2.2 Workload and demand 156
2.3 Information and support 161
3 Discussion 169
3.1 Organisational setting and practice 169
3.2 Workload and demand 170
3.3 Information and support 172
4 Conclusion 174

CHAPTER 6 SUMMARY DISCUSSION AND CONCLUSION 175

1 Key findings 175
1.1 Individual factors, knowledge, and beliefs 175
1.2 Communication and relationship factors 177
1.3 System-related factors 181
2 Strengths and limitations 187
3 Implications and recommendations 190
3.1 Implication for practice of self care 190
3.2 Implication for policy 192
3.3 Implication for the pharmacy profession 194
3.4 Implication for the researcher and future research 196
4 Conclusion 198

REFERENCES 199

APPENDICES 214

Appendix 1: University of Nottingham ethical approval 215
Appendix 2: MoH ethical approval 217
Appendix 3: interview guide of phase one: the public 218
Appendix 4:interview guide of phase two: HCPs 219
Appendix 5: participant information sheet for phase 1 - English 220
Appendix 6: participant information sheet for phase one - Arabic 221
Appendix 7: participant's Recruitment card, phase one 224
Appendix 8: participant information sheet for phase two – English 225
Appendix 9: participant information sheet for phase two – Arabic 227
Appendix 10: invitation letter to HCPs - English 229
Appendix 11: invitation letter to HCPs – Arabic 230
Appendix 12: participant's recruitment card for phase two 230
Appendix 13: participant consent form – English 231
Appendix 14: participant consent form – Arabic 233
Appendix 15: confidentiality agreements for transcribing and translation of the Interview transcripts 234
Appendix 16: confidentiality agreement for certified translation of the Interview transcripts 235
Appendix 17: flow-chart of the translation and back-word translation process 236

Appendix 18: backword translation of phase one transcripts 236
Appendix 19: backword translation of phase two transcripts 238
Appendix 20: translation of Arabic metaphores and idioms 239
Appendix 21: OSOP technique for qualitative data analysis 241
Appendix 22: the NVivo® codebook 242
Appendix 23: characteristics of the phase one Interviewees and place of interview 243
Appendix 24: characteristics of the phase two Interviewees and place of interview 244
Appendix 25: the study theoretical model 245

List of Figures

Figure 1: the self care continuum 5
Figure 2: the rapid growth of private health institutes 17
Figure 3: geographical location of Oman. 19
Figure 4: the Governorates of the Sultanate of Oman. 20
Figure 5: a comparable chart of the population age range between Oman and UK 21
Figure 6: population pyramid of (a) Omani, (b) total population. 22
Figure 7: the organisational chart of healthcare system in Sultanate of Oman 25
Figure 8: health status indicators of Oman 1970 – 2015. 27
Figure 9: distribution of health workforces among the healthcare sectors in Oman. 31
Figure 10: coding procedures in qualitative data analysis 52
Figure 11: the study model of qualitative method and data analysis. 58
Figure 12: the coding process and analysis of the study data 81
Figure 13: the study theoretical model 82
Figure 14: layout of the thesis chapters 83

List of Tables

Table 1: number of hospitals and beds in different health sectors 26
Table 2: health human resources indicators 30
Table 3: statistics of pharmacy profession in Oman. 38
Table 4: the key area explored in the Interview. 67
Table 5: characteristics of the interviewees 80

List of Abbreviations

A&E	Accident & Emergency
AFMS	Armed Forces Medical Services
BNF	British National Formulary
CKS	Clinical Knowledge Summaries
CME	Continuing Medical Education
CPD	Continuing Professional Development
DG	Directorates General
DGPA&DC	Directorate General of Pharmaceutical Affairs and Drug Control
DH	Department of Health
DMS	Diwan Medical Services
DRUM	Directorate of Rational Use of Medicines
FAMCO	Family and Community Medicine or Family Medicine
FIP	International Pharmaceutical Federation
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GP	General Practitioner
HC	Health Centre
HCPs	HealthCare Professionals
HCT	Higher College of Technology
INN	International Non-proprietary Name
IT	Information Technology
IV	Intravenous
KSA	Kingdom of Saudi Arabia
MAs	Minor Ailments
MoD	Ministry of Defence

MoH	Ministry of Health
NA	Not Available
NCD	Non-Communicable Diseases
NCSI	National Center of Statistics and Information
NHS	National Health Services
NICE	National Institute for Health and Care Excellence
NPM	Non Prescription Medicine
NSAIDs	Nonsteroidal Anti-Inflammatory Drugs
OMC	Oman Medical College
OMR	Omani Rial
OMSB	Oman Medical Specialty Board
ONS	Office for National Statistics
OSOP	One Sheet of Paper
OTC	Over The Counter
PHC	Primary Health Centre
PRT/CT	Positron Emission Tomography/Computed Tomography
PSA	Pharmaceutical Society of Australia
QDA	Qualitative Data Analysis
ROPH	Royal Oman Police Hospital
RTAs	Road traffic accidents
SQU	Sultan Qaboos University
SQUH	Sultan Qaboos University Hospital
UAE	United Arab of Emirates
UoN	University of Nizwa
WBG	World Bank Data
WHO	World Health Organisation
WSMI	World Self-Medication Industry

List of definitions

Assistant Pharmacists: In Oman, assistant pharmacist is a pharmacy staff member who has completed a diploma in pharmacy degree (minimum of two years); and work under the supervision of pharmacists. Their role could be equated to pharmacy technicians in most developed countries including the UK. However, they are different to some technicians as they have had comprehensive academic courses and training in pharmacology and pharmacy practice.

Community pharmacy: in Oman, community pharmacy is part of the private sector and therefore it is sometimes identified as private pharmacy. Unlike other countries, where the supply of prescription medicines is handled by the community pharmacy, in Oman it is not a common practice for the public who are eligible for free government treatment to use the community pharmacy to collect their Ministry-of-Health-issued prescription. For further details on dispensing free prescription see (health centre pharmacy)

Family Medicine Programme: this is a four-year residency training programme for general practitioners (GPs). It is a specialty in primary care that provides continuing and comprehensive healthcare for patients within the context of family and community. In the UK, family medicine doctor or physician is usually referred to as a GP; and the residency training programme is therefore a requirement for all medical graduates who want to become a GP. However, in Oman the system is different, medical students are eligible to practice as a GP once they have successfully completed their internship and passed the licensing exam. Selected GPs only are enrolled in the family medicine programme provided by the Oman Medical Speciality Board (OMSB); as the seats are limited. Therefore, there are limited numbers of family and community doctors (FAMCO doctor) in every primary health centre; and their main current role is to run chronic condition clinics.

Gulf Health Council: The health executive board of Arab countries in the Gulf Cooperation Council (GCC) States, formally known as executive board of the health ministers' council for cooperation council states. It was established in 1976 and it aims to coordinate between the GCC countries in the health field; and unifying the efforts of its members for the development of the health services and achieving the highest possible standards of health for the citizens of the Council members.

Health centre pharmacy: is an onsite pharmacy located inside every public primary health centres (equivalent to GP practice in UK) and where the patient collects his/her GP prescription free of charge. Pharmacy staff (pharmacists and assistant pharmacists) will be referred to as health centre or public pharmacists/ assistant pharmacists in this thesis, to differentiate them from community pharmacy staff (private sector).

Minor ailments: are any conditions that are uncomplicated, self-limiting and can be self-diagnosed and managed without medical intervention. "minor ailments" is the common term used in UK, other terms are used to indicate minor ailments, namely: acute condition, minor illness, common symptoms/ailments.

Non-prescription-medicine: a class of medicines that can be obtained without the need for a doctor's prescription. There are two classes: Over-the-counter drugs (OTC) and Pharmacy (P) or pharmacist-only medicines. OTC medicines are sold in pharmacies open shelves, super-markets, and other outlets for the consumer to self-select. Pharmacy medicines usually require the pharmacist's assessment for obtaining the non-prescription medicine. In some counties, like Oman, the sale of OTC medicines is not allowed outside a pharmacy premises and usually located behind the pharmacy counter. In this case, there is no clear classification for "pharmacist-only medicines"; and the term "OTC" is usually used in this setting to refer to any of the two classes of the non-prescription-medicines.

Over-the-counter medicines (OTC): see Non-prescription-medicines.

Patient: is the traditional term for a person receiving healthcare; It probably does not fully express the emphasis on self care that is the focus of this thesis. Self care is practiced by lay people outside a healthcare setting or by a patient in a healthcare setting. Therefore, the terms, public or patient are going to be used according to context where self care is discussed e.g. patient within GP practice.

Pharmacy staff: in Oman only pharmacists and assistant pharmacists (see definition of assistant pharmacists) are allowed to work in a pharmacy premises and provide pharmaceutical services for the patient. In special circumstances, some pharmacies can be managed by the assistant pharmacists without the presence of pharmacists for short periods of time and do all the dispensing activities. Therefore, the term "pharmacy staff" is going to be used to indicate the two pharmacy professions working in a pharmacy.

Public pharmacy: see health centre pharmacy.

Chapter 1 Introduction: background and scene-setting

1 General Overview

Self care and responsible self-medication are vital components of modern healthcare.(FIP 1996, FIP & WSMI 1998, WHO 2009, WSMI 2014) Self care has been emphasised worldwide to improve patient involvement and empowerment in managing their conditions. The self care trend, that moved traditional physician care toward patient-centred care, was found to improve health outcomes, patient satisfaction and utilisation of health services that are facing continuous economic constraints. Therefore, the governments of some countries have encouraged self care in their health policies and strategies to improve healthcare effectiveness including healthcare expenditure and sustaining the equity of healthcare at lower cost.(DH 2005, WHO 2009, Paudyal et al. 2011)

Society is changing and people want to be more involved in their own health, to have more control and to be given choice. As people became more educated, and because of the massive availability of information related to health through the internet, people's attitudes toward their own health are changing. Today the terms "patient empowerment" and "patient-centred care" are used in healthcare systems that support self care and encourage patient involvement as active partners in their own health rather than as passive receivers of healthcare. As a result, people want more support for self care, they need appropriate and accessible information and advice. Access to health information is an important component of empowerment, the quality of information and health literacy are important to support the self care promotion process.(WHO 2009) For this is to be achieved, healthcare professionals must build good relationships and have effective communication with patients in order to effectively promote and support self care.

Pharmacists and community pharmacy staff can play a vital role in supporting self care, from giving health advice, selection of non-prescription medicines for their minor ailments, and also supporting patients with self-management of chronic conditions. They are in a good position to support people's self care and self-medication. The role of the pharmacist in patient care has developed in the last few decades as there has been a transition of the pharmacy profession from product-oriented services and a move towards more patient-oriented services.(FIP 1996, WHO 1998) Community pharmacies are the most convenient and accessible healthcare professionals, and this puts them in a strong position to support people who wish to exercise self care and self-management. For example, self care of minor ailments can be effectively delivered by the community pharmacists, who can provide the related advice for the public on their symptoms and on the selection of over-the-counter (OTC) medicines. They can also identify the need for referral for issues beyond their scope of practise. The minor ailments schemes in UK have been shown to be effective in reducing the workload of the GPs in seeing minor ailment cases and can improve the cost utilisation as a result of the public not utilising the GP or A&E services for minor conditions.(Watson et al. 2015) The International Pharmacy Federation in their latest report reinforced the expansion of the pharmacist role in self care as a gateway to better patient care.(FIP 2017)

Different levels are involved in promoting self care and policy makers play an important part in supporting the changes for better healthcare systems. World Health Organisation explained that "The government's policy is a prerequisite for promotion of self care as an integral part of the primary healthcare on the national scale".(WHO 2009) In Oman, the term "self care" is not directly explicit in the future strategy of developing the Omani healthcare 2020 and 2050.(MoH 2014, MoH 2016b) However, the vision is aiming to overcome the challenges of the Omani healthcare system by developing strategies that enhance and support the involvement of the community in its development. Identification of the challenges causing overstretching of the health system and its expenditure, highlighted the need to develop a new model of care that effectively utilises the available

resources through effective collaboration between healthcare professionals to provide integrated healthcare, and between the different healthcare sectors for better utilisation of health services. Hence, this aim of shifting how government run healthcare system - from being the only healthcare provider to emphasise the involvement of the community and other sectors - indicated the need of supporting and promoting self care in the healthcare system.

This project aims to build a case for developing the role of pharmacy profession within primary care. With the lack of research in self care; and pharmacy practice and policy in Oman we identified a need for new knowledge in this area. Exploring the perceptions and experiences of stakeholders (public, pharmacists and physicians) to self care and the utilisation healthcare services, will give a better understanding of factors that influence self care and the contribution of pharmacists in self care of minor ailments. This will help in developing a conceptual model for researchers and decision makers to consider in implementing and promoting self care in the healthcare system.

The next part of this chapter is a review of the literature on the topic of the research. Further it provides an overview of the Omani health system to explain the country context, where the study was conducted. Chapter two describes the methodology and the method of the project. Chapters 3-5 present the results of the study that were classified into three main themes that summarise the factors related to: (i) individual knowledge, belief and attitude; (ii) communication and relationships; and (iii) healthcare system; each is presented and discussed in a separate chapter. The final chapter provides a general discussion of the conceptual model constructed from the three main themes of the findings. It also discusses the impact of the findings on the delivery and quality of patient care in the Omani health system and identifies a roadmap of strategic planning to improve the role of pharmacy profession in Oman. The chapter concludes with future recommendations for policy, practice and research.

2 Research background

2.1 Self care and self-medication

Self care and responsible self-medication are vital components of modern healthcare.(FIP 1996, FIP & WSMI 1998, WSMI 2014) Self care has therefore been emphasised worldwide to improve patient involvement in managing their conditions. In addition, reclassification of medicines from prescription-only-medicines (POM) into non-prescription-medicines (NPM) has enhanced the patient's role in self-medication of common and minor conditions that patients can safely self-manage and reduces the burden on accessing healthcare for these types of conditions. Different definitions for the term self care were identified in literature, and are discussed in the next section.

2.1.1 Defining Self care

Self care is a broad concept that combine a different aspect of healthy living from lifestyle to self-management of health conditions and self-medication to ability to take a decision when to seek medical care.(WHO 1998, Richard and Shea 2011, Webber et al. 2013, SelfCare Forum 2017) Different descriptions of the term self care were identified in literature, thus there is no unified definition of the term of "self care", but they all agree that self care incorporates any activities performed by lay individuals to maintain health and prevent illnesses.(WHO 1984, FIP 1996, WHO 1998, DH 2005) The World Health Organisation has defined self care as: "*the activities individuals, families and communities undertake with the intention of enhancing health, preventing disease, limiting illness, and restoring health."* It further explained that "*these activities are derived from knowledge and skills from the pool of both professional and lay experience; that are undertaken by lay people on their own behalf either separately or in participative collaboration with professionals*". (WHO 1984)

The broad concept of self care was clearly represented in the self care continuum (see Figure 1). Today, self care is considered a shared model of care, which is not limited to the individual's own actions or decisions about care, but extends to the individual identifying when it is necessary to seek professional healthcare.(SelfCare Forum 2017)

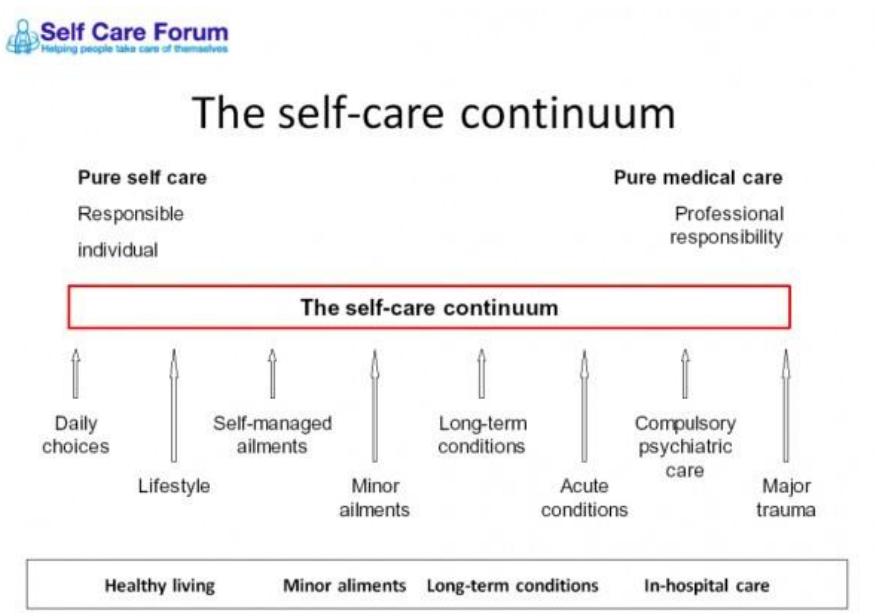


Figure 1: the self care continuum; reproduced with permission from (SelfCare Forum 2017)

2.1.2 Self-medication

Self-medication is one component of self care and it was defined by WHO in (1998) as "*the selection and use of medicines by individuals to treat self-recognised illness or symptoms*" the medicines can include herbal or pharmaceutical products. This has encouraged people to access medicines for their recognised illness or symptoms. In recent years, more and more medicines have been deregulated to "non-prescription" status, that are available for the public to access without seeing a doctor for a prescription.(Blenkinsopp and Bradley 1996, WHO 2000b, WSMI 2009) It was reported that the amount of prescription medicines supplied without prescription exceeded the

amount of OTC medicines purchased, as only 34% of the total medicines dispensed without prescription were OTC medicines.(WHO 2000a) The management of minor illness in general practices; requiring non-prescription medicines could strain the government health budget. (Blenkinsopp and Bradley 1996, Watson et al. 2014) Cost is considered one of the derivatives toward promoting self care and self-medication. In some countries, shifting the cost to the consumer can help to contain the government health budget. However, in some countries where access to public healthcare is limited, people preferring to self-medicate by purchasing OTC medicines, that they found to be less costly than to obtain GP prescription.(Wen et al. 2011)

For responsible and safe self-medication, it is important to support patients with information and support them to make an informed decision. In a setting where non-prescription medicines are accessed through a community pharmacy, pharmacy staff therefore are in a strong position to facilitate safe self-medication and support the public with their self care practice.(WHO 1998)

2.2 Self care in the health system

In recent years, self care has been increasingly recognised by healthcare organisations and policy makers as a vital aspect of the health system and in the delivery of healthcare. Many factors have been identified as drivers to promote self care in health policy, including: (i) people's demand to access more convenient and better healthcare, (ii)increase in the public's access to non-prescription medicines and self-medication, (iii) people are more educated and informed and want more control over their own health, and (iv) the on-going pressure of the government to control health expenditure and the shortage of human resources. Therefore, many countries reformed the delivery of healthcare services and the role of healthcare professionals to support patient self care.

In UK, for example, self care was adopted by the NHS in its healthcare strategy to improve patient's outcomes and satisfaction; and for better use of the NHS services.(DH 2005) To support and promote self care in the health system, it is important to identify and understand the factors that influence self care behaviour and its implication on the health system.

2.3 Self care of minor ailments

Minor ailments are any conditions that are uncomplicated, self-limiting and can be self-diagnosed and managed. (Cardol et al. 2005, Welle-Nilsen et al. 2011, Watson et al. 2014) In most cases, they can be managed by the individual him/herself with a simple intervention and do not require specialised health intervention. However, in some cases patients may need access to non-prescription medicines and health advice, and therefore seek the support of healthcare professionals. Ensuring safe self-medication behaviour and better utilisation of GPs workload, community pharmacy has been identified to be in a good position to provide professional advice to support patients through self care of minor ailments.

Self care of minor ailments in community pharmacy has been promoted to save healthcare resources, whilst maintaining the delivery of standard levels of care to the patient. Pharmacists have been encouraged to extend their roles and support the public on safe self-medication of minor ailments. (WHO 1998, DH 2005, RPS 2006, FIP 2017) Identifying the role of the community pharmacy in health strategy and policy are essential to develop and extend the clinical services provided by pharmacists. For example, "Minor Ailments Schemes", in the UK, were introduced as part of primary care strategy to improve access to healthcare and reduce the unnecessary utilisation of GP practices and Accident and Emergency departments for minor ailments. These schemes aim to

encourage the public to consult the community pharmacist on their minor ailments, as an alternative to GP practice when they are eligible for free prescriptions. In general, people who use "Minor Ailments Scheme" services provided by their local community pharmacy were satisfied with the service. (Paudyal et al. 2011, Pumtong et al. 2011) This also appears to have a positive impact on GP workload, with improving the access to GP for the more critical or severe cases.(Paudyal et al. 2013) Pharmacists agree that the consumers of the service do appreciate their approach in advising and consulting with the patients and receive positive feedback, who explained they are likely to use the service again.(Pumtong et al. 2008) As the demand to access healthcare is increasing and medical care is becoming more expensive, managing minor ailments in community pharmacy is considered less costly than using the GP practice or emergency department. as the average overall costs per consultation were found to be £29.30, £82.34 and £147.09, respectively.(Watson et al. 2015) This could contribute in reallocating cost savings to other services.

However, it is reported that the public utilisation of clinical services provided by the community pharmacy remains low.(Wagner et al. 2011, Watson et al. 2014) This highlights the need of further exploring people's attitude toward utilisation of these services and the community pharmacists' attitudes in providing them. As pharmacist's themselves were identified to be a barrier to facilitate services provision and effectively integrate in patient care. (Wagner et al. 2011, Watson et al. 2014, Rutter 2015, FIP 2017)

2.4 Pharmacists and self care

"*The Pharmacist is an advisor to the public on everyday healthcare and is a key figure in the supply and delivery of medicines to the consumer*"(WHO 1998) He/she can play a vital role in supporting patients in self care and managing their health needs from giving health advice, facilitate safe self-medication, or even identify the need for GP referral. Community pharmacy or pharmacists are recognised as being in a good position to provide professional advice on self care and self-medication. Policy makers of many developed countries have identified the clinical role of the pharmacy profession in the health system and released strategy documents and "blueprints" in transforming the future role of pharmacists in patient care. In the UK, for example, a number of documents have been released which highlighted the need for, and importance of, restructuring the role of the pharmacy profession by setting out the vision of the future pharmacy to fulfil the NHS plan; these include *"Pharmacy in future 2000", "A vision for the pharmacy 2003", "Pharmacy in England: building on strength – delivering the future 2008" and the recent report "Now or never: shaping the future of the pharmacy 2013".(DH 2000, DH 2003, DH 2008, Smith et al. 2013)* This has resulted in community pharmacists playing a vital role in healthcare, and effectively contributing to improving the access to healthcare services.

In Oman, like any developing country, the role of the community pharmacist is in the developing stage. Pharmacists are broadly identified as a "drug expert", however their contribution to the provision of healthcare services is not well recognised by the public. This attitude to pharmacy is almost similar to the Arab Gulf Countries i.e. GCC (see section 3.1.1), which share the socioeconomic and cultural values of Oman. Studies of the GCC countries showed that there has been a positive change in patient's perception toward the role of the community pharmacist compared to 10 years ago. However, it is slow as about 50% of people perceive pharmacists as medicine suppliers or vendors, rather than as healthcare professionals. Most of the participants agreed that although pharmacists can be approached easily for advice on health issues or access to medicines,

they still prefer to consult physicians in the first instance.(Bawazir 2004, El Hajj et al. 2011, Al-Arifi 2012) Evidence from neighbouring Arab Countries also showed that more than half of the people would obtain medicines from community pharmacies for self medication. Reasons identified were: people considered the conditions to be minor to visit a doctor, to avoid long-waiting time or the cost of seeing the doctor, and have previous experience with the condition.(Wazaify et al. 2008, Yousef et al. 2008, Suleiman 2013) However, few of them (13%) seek pharmacist's advice when purchasing these medicines.

In Oman, pharmacy practice research is lacking. One study looked at pharmaceutical care in Oman; the community pharmacist reported that their clinical role is not recognised by the customer, they perceive them as more concerned with the business and their attempt to give health advice is interpreted as a way to make profit.(Al-Abdullatif 2014) However, the study was based on community pharmacy staff self-reporting. This therefore needs to be explored from the customer point of view, since limited studies have looked at customers' perception to access the community pharmacy for advice on minor ailments, or how the primary healthcare services are utilised for the management of minor ailments.

2.5 Patients and self care

Self care is part of the decision people take to cope with the symptoms or illness. However, the decision the patient takes when responding to their symptoms does not always resonate to the clinicians or match the medical expectation.(Morris et al. 2006, Braunack-Mayer and Avery 2009) In the last three to four decades, lay illness behaviour and psychology of health has been studied to understand the factors that influence their decisions, and improve the delivery and access to the healthcare services.(Zola 1973, Andersen 1995, Leventhal et al. 1998) People were found to interpret and respond to

symptoms in different ways that are influenced by factors related to individual perceptions to illness, or to socioeconomic and cultural factors.(Leyva-Flores et al. 2001, Braunack-Mayer and Avery 2009, Jurgens et al. 2009, Taylor 2011) When it comes to minor ailments and use of OTC, some people prefer self care indicating that they do not want to waste GP time. However, others still prefer to see the GP for advice on minor ailments.(Hassell et al. 2000, Bojke et al. 2004, Hughes et al. 2007) Elliott et al. (2012) who investigated incongruous consultation behaviour stated that 45% of all the GP consultations for low impact symptoms occurred were for patients with minor ailments. In this study, low Impact symptoms were defined as any trivial symptoms either chronic or self-limiting that is rated as least serious or has no or little interference on daily life. People preference to consult the doctor on symptoms that are medically classified as minor could be influenced by different factors such as: cost, people belief of the doctor as acceptable healthcare professionals for advice on minor ailments, need reassurance or confirm diagnosis, previous experience and severity of the symptoms.(Bradley et al. 1998, Hassell et al. 2000, Bojke et al. 2004, Cantrill et al. 2006)

The perception of individuals to their signs or symptoms influences their health seeking behaviour. Severity of the symptoms, duration or other factors that the individual identifies as abnormal could trigger their urgency of seeing a doctor. However, this is not a straightforward relation and other factors, external or internal, can influence why an individual decided to seek doctor advice on the symptoms experienced. Hence, the frequency and/or seriousness of symptoms are not good predictors of attendance at the doctor; and most people make decisions to seek (or delay seeking) help that are rational for them, in terms of their own beliefs and values; or even the previous experience that regulate future behaviour of responding to the symptoms. (Braunack-Mayer and Avery 2009, Leventhal et al. 2012) In some countries, like UK, people who are exempted from prescription costs usually prefer to see the GP for a free prescription and avoid paying for the OTC medicines which is why pharmacy minor ailments schemes have been developed.(Hassell et al. 1997, Bradley et al. 1998, Hassell et al. 2000) However, in

other countries people find self care is cheaper than paying for health services that are not free to access.(Wen et al. 2011) Therefore factors like cost could be a barrier to promote self care of minor ailments. Individual behaviour is complex, and some studies identifying people's preferences showed that people could pay for a service or treatment through the community pharmacy if it was more convenient for them rather than waiting to access the free care available or to avoid the waiting time for accessing a GP. (Porteous et al. 2006, Rennie et al. 2012, Anderson and Thornley 2014) Studies that used a discrete choice experiment method have found that people showed a preference to self care and visiting the pharmacy rather than the GP for their minor symptoms and are willing to pay not less than £21 and £19 respectively to do so.(Porteous et al. 2006, Rennie et al. 2012)

Understanding people's perceptions and the influencing factors when responding to their illness, helped to drive the changes in accessing the primary care services and identify different approach in providing the support that people need in self-managing their conditions. In the UK, for example, research on self care and minor ailments supported in deriving the change and policy supporting strategies to shift the access and delivery of some primary healthcare services to a community pharmacy.(Hassell et al. 2000, Gulliford et al. 2001, Cardol et al. 2005) Providing different primary care services is a strategy adopted that can improve access to healthcare, overcome the burden of limited resources and ongoing demand to access healthcare, maintain the cost of accessing more expensive healthcare services e.g. emergency department during out of hours. Examples of these services are found in UK primary healthcare services that includes: community pharmacy, walk-in-centres, and NHS 111 tele-support.(NHS Choices 2015)

2.6 General practitioners and self care

Self care gained wide support from healthcare professionals; that is not only believed to improve patient health outcomes, but also in improving GP workload enabling them to see more serious cases and to maintain effective and sufficient utilisation of the general practice. In the self care of minor ailments, the way that GPs handle minor ailments can influence the patient's future behaviour in responding to the similar symptoms.(Morris et al. 2001) GPs, therefore need to effectively contribute in supporting the patient to exercise self care by providing the information and advice required. GPs who recognise the role of the community pharmacy in self care of minor ailments can inform the public of the benefit of consulting the community pharmacist for advice on self care and self-medication. Inter-professional relationships and collaboration between GPs and community pharmacists has been found to be important for effective utilisation of the services provided by the community pharmacy.(Morris et al. 2001, Saramunee et al. 2014, Watson et al. 2014) Although the majority (more than 75%) of the GPs displayed a favourable attitudes towards the pharmacists' role in minor ailments, only about half agreed that they would like actively to recommend that patients seek advice from a pharmacist. A lack of a personal relationship with a pharmacist appeared to influence their views; as 48% found it uneasy to suggest to their patients to seek advice on minor ailments from a pharmacist who was not known personally to the GP; which raises concerns about the quality of advice that the patients may receive.(Morris et al. 2001)

An effective multidisciplinary approach, identifying the clinical role of the pharmacist, can have a positive impact on the success of the service provided.(Gidman and Cowley 2013, Saramunee et al. 2014) Pharmacist-GP relationships have been highlighted to be important for the effectiveness of pharmacy-services provided for the patient. (Morris et al. 2001, Hughes and McCann 2003, Gidman and Cowley 2013, Saramunee et al. 2014, Watson et al. 2014) Many developed countries therefore are working on improving the collaborative practice between the community pharmacists and general practitioners and enhancing better multidisciplinary and integrated healthcare.(Pottie et al. 2008, PSA

2014, NHS England 2016) Physician education around the role of pharmacists was found to be critical in building collaborative relationships between physicians and pharmacists.(Arya et al. 2013)

In Oman, no published studies have explored the perspectives of the physicians and/or the pharmacist on collaborative care. Studies from GCC countries (UAE and Qatar) showed that the current practice of the community pharmacy, being product-oriented, influenced the doctor's expectations of the ability of the community pharmacists to provide patient-oriented services.(Wilbur et al. 2012, Hasan et al. 2014, Rayes and Abduelkarem 2016) They recognise the competency of the pharmacist in providing medicines information, and in medicines review and counselling. However, they showed a concern about the competence of community pharmacists to deliver patient-centred services. The study by Wilbur et al. (2012) in Qatar, assessed how comfortable the physicians were with specific pharmacist roles and activities. It found that physicians were more comfortable with pharmacists providing services linked to drug-products that was rated high compared to activities linked to optimising patient outcomes. For example, 67.8% and 75.5% of physicians were completely comfortable with pharmacists providing patients medication-related education, and detecting and preventing prescription errors, respectively. However, physicians rated low for responsibilities associated with therapy optimization to be provided by the pharmacists; as only 29% were comfortable with pharmacist recommending changes in therapy to them when patient outcomes were not achieved. However, physicians in these studies were receptive to collaborate with the pharmacist and learn of the services that community pharmacy can provide to enhance patient care. Lack of communication and collaborative care were identified as a barrier to enhance the role of the community pharmacy in patient care. Exploring the attitude of the general physicians working in the primary care sectors, towards self care and the role of the pharmacist in self care of minor ailments, can give a better understanding of the current situation and facilitate intervention to enhance the clinical role of pharmacists in patient care.

2.7 Self care and its implication for pharmacy in Oman

The concept of self care has not been sufficiently studied in Oman. The evidence available indicates that the public depend highly on the free government health services, and the majority visit physicians for health advice and treatment.(DRUM 2009, Al-Mandhari et al. 2013) This is expected as the government covers more than 80% of the healthcare services in the country that is non-tax based and free for the Omani citizen. In addition, the multidisciplinary model of care is not emphasised and practiced in the primary care setting. Physicians are the main provider of patient care and dominate the delivery of healthcare in the primary care sector.

The administration of pharmacy practice is complicated in Oman. Community pharmacy is considered as part of the private sector rather than part of the health system. The main role of community pharmacists is to dispense private prescriptions for individuals who have medical insurance or are willing to pay out-of-pocket for their healthcare. Pharmacies also supply non-prescription-medicines as most of them are to be sold from a pharmacy only. In addition, all the public health centres (GP practice) have their own onsite pharmacy that dispense the medicines for the patients free of charge; this includes medicines for minor ailments. A study that looked at the pharmaceutical care in Oman, indicated that the clinical role of the pharmacy profession is not well identified in primary care and the provision of pharmaceutical care is lacking in this sector.(Al-Abdullatif 2014) Literature identified different factors that could be considered as a facilitator or inhibitor to enhance the role of the community pharmacy in self care and self medication. (Blenkinsopp and Bradley 1996, Paudyal et al. 2011, Rutter 2015, FIP 2017) Lack of pharmacy practice research in Oman, identified a knowledge gap in when and how the community pharmacy is utilised by the public, and what are the public perception regarding accessing the community pharmacy for advice on self care. To promote the role of the pharmacist in self care, it is important to understand the current situation of the provision and utilisation of the health services.

Understanding individual health illness behaviour and utilisation of health services can help in in improving access to healthcare. The health-seeking behaviour of Omani citizens to primary healthcare was studied by AL-Mandhari et.al (2008, 2009, 2013), using structured face-to-face interviews with participants attending public healthcare services. The findings indicate that most patients (84%) visited health centres to seek physician advice, and 40% were seeking treatment for acute conditions.(Al-Mandhari et al. 2013) However, this finding was based on a general survey that studied the factors influencing the utilisation of the public health centres by the users of health centres and did not identify the type and severity of acute illness or symptoms, and did not explore the utilisation of community pharmacy or the attitudes of people who decided to do nothing. No published data were found to compare it with the utilisation behaviour of other members of the public who consulted other healthcare providers e.g. community pharmacy or those who did not consult anyone in the health sector. Further, the study was conducted in 2006 and did not capture the variation in health seeking behaviour following the tremendous change in delivery in primary healthcare in the last ten years, (see Figure 2) which is explained in detail on the next page.

In addition, a study on the use of medicine in Oman showed that third of the participants visiting the GP expect to receive at least three medicines, and 39% of participants were not satisfied with non-prescription advice. (Abdo-Rabbo et al. 2009) It is also reported that 60% of participants would visit more than one clinic on the same day for the same symptoms and 51% prefer not to follow up with the same GP if symptoms persisted. The irrational behaviour of responding to symptoms by the Omani population was described as "quick fix" and "a pill for every ill". The most recent household survey, 2009 on the use of medicines indicated that 70% of the medicines acquired by the public are obtained from onsite pharmacies of public health premises (prescribed by physicians) and only 21% from community pharmacies.(DRUM 2009) The study stated that most people (88%) seek professionals advice and only 8% self-medicate. However, the evidence shows that more than half of the left-over medicines are kept by the people and may be used for

future recurrent symptoms, which indicate a practice of self-medication. With the scarcity of evidence and research, it is believed that there is a knowledge gap about how people manage their common recurrent symptoms and their attitudes to self care or self-medication. Therefore, it is important to explore and understand the factors that influence public behaviour and decisions on self care when responding to their illness or common conditions.

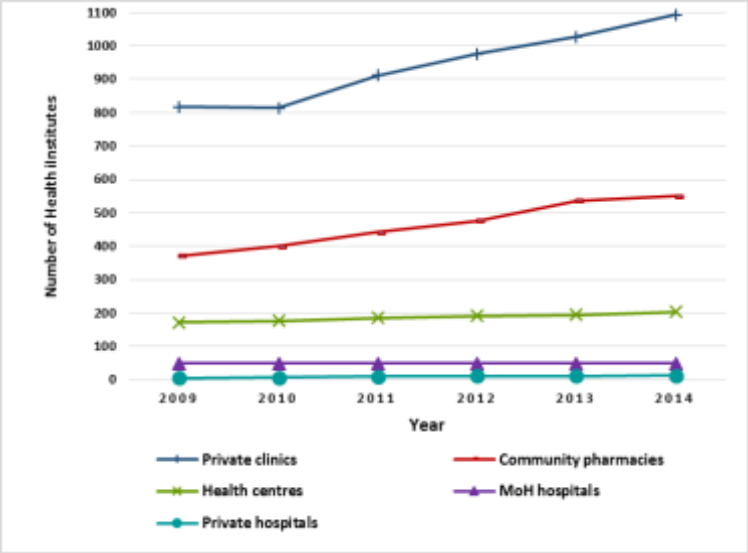


Figure 2: the rapid growth of private health institutes

In the last ten years, there were tremendous increases in the number of the pharmacy profession who are working in the primary care sector: health centres and community pharmacies, (see Figure 2). The number of the community pharmacies exceeded 600 in 2015 compared to 364 in 2008, and most provide extensive working hours compared to the public health centres with some open 24 hours. Despite this large increase in number no well-defined structures or strategies have discussed how the private sector and community pharmacy could be incorporated into the healthcare strategy. Hence the pharmacy profession workforce is underutilised in the delivery of patient care in this sector. The pharmacist was identified as an expert in matters related to medicines by 84% of the Omani people; however only 42% of them positively perceived the pharmacist

as having expertise in providing advice for the treatment of minor ailments. Evidence indicates that the role of the pharmacy profession in self care of minor ailments is not recognised by the public, as the remaining were not sure or agreed to the later statement, 58%.(Jose et al. 2015)

We know that self care is part of people's health seeking behaviour. However, this has not been well studied in Oman and has raised a knowledge gap in how the people actually respond to their common minor ailments and how they utilise the available health services. We need to explore the patient decision-making process and health seeking behaviour for symptoms of minor ailments. Exploring the healthcare professional perceptions toward self care and their experiences of managing minor ailments could help in exploring the facilitators and barriers of using the community pharmacy for the management of minor ailments. With the lack of a clear future strategy or blueprints for the pharmacy profession in contributing for the development of the Oman health vision 2050; this study could identify the current situation and make a case for enhancing the clinical role of the community pharmacy in the primary healthcare sector of the Omani health system. This therefore identified the stakeholders for self care of minor ailments in Oman to be studied in this research: (i) the public, (ii) pharmacy staff and (iii) GPs. Exploring their perspectives can give a better understanding of self care and utilisation of health services for the management of minor ailments. The study rationale and objectives will be explained at the end of next section which will provide an overview of the study context and an explanation of pharmacy practice and policy in Oman.

3 Country background

3.1 Oman country profile

3.1.1 Geographical Description of the Sultanate of Oman

Sultanate of Oman, also called Oman, is one of the western Asian countries and it is located in the south-eastern corner of the Arabian Peninsula, (see Figure 3). The costal line expands from the Strait of Hormuz in the north to the border of the Republic of Yemen in the south with a length of 3,165 Km. It borders the United Arab Emirates (UAE) and Kingdom of Saudi Arabia (KSA) in the west and the Arabian Sea in the East. It is a member of Gulf Cooperation Council (GCC), which includes six countries: Kingdom of Saudi Arabia, Oman, UAE, Kuwait, Qatar and Kingdom of Bahrain. The Capital of Oman is Muscat.

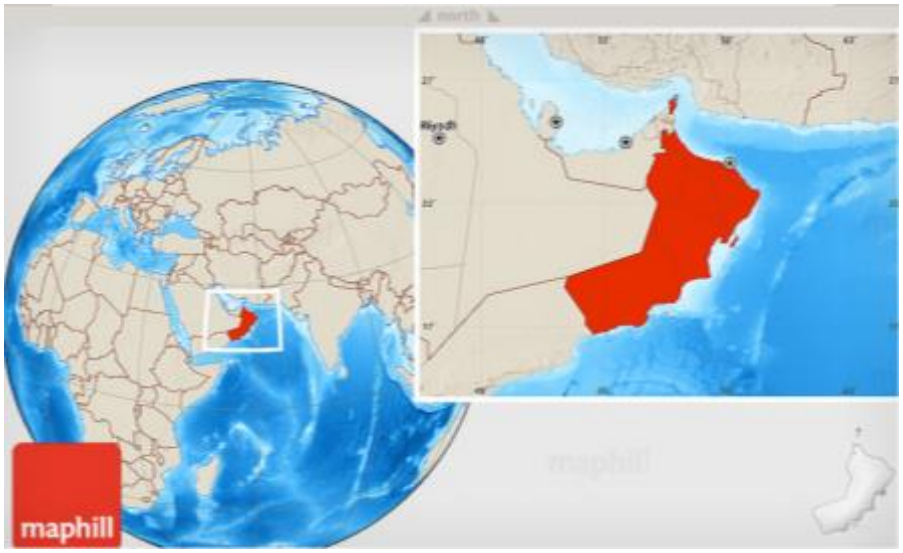


Figure 3: geographical location of Oman.(Maphil 2011)

The total area of the Oman is almost 309,500 Km^2 and it consists mainly of wadies (valleys) and desert (82% of the total area), and mountains (15%). The Country is administratively divided into eleven governorates: Muscat, Musandam, Al Buraimi, Al

Dakhliyah, Al Dhahirah, Al Batinah North, Al Batinah South, Al Sharqiyah North, Al Sharqiyah South, Al Wusta and Dhofar. The Governorates are then further divided into 60 Wilayats (districts). Each Wilyat is presided over by a wali who is acting as a link between the government, its institution and the public. The Governorate of Muscat is the political, economic and administrative centre of the country. It is also the location of Muscat, the capital city of Oman, (see Figure 4).

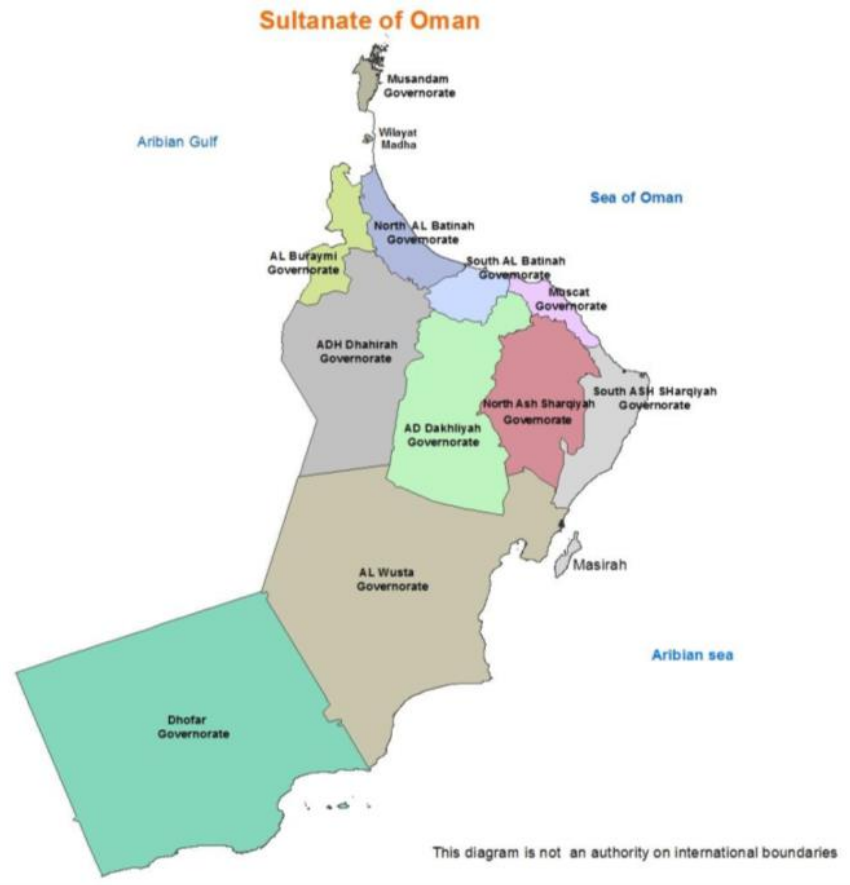


Figure 4: the Governorates of the Sultanate of Oman. (MoH 2009a)

3.1.2 Demographic structures

The total population of Oman in 2015, based on the National Centre for Statistics and Information (NCSI), is about 4,159,102 compared to 2,773,479 inhabitants in 2010. The growth of the non-national population is expected, as the country is requiring an

additional workforce to accomplish the huge projects of infrastructure and economic development. As a result, in 2015 non-Omanis represents 43.6% of the total population compared to 29% in 2010. About 31% of the population are living in the governorate of Muscat, followed by Al Batinah North with a percentage of 16%. The lowest population are in Al Wusta and Musandam with a percentage of 2% of the total population.(NCSI 2015) The children under 15 years represent 36% of the Omani population and 60% of Omanis are at the working age (15-64 years). The ageing group (≥65) represent only 4% of the Omani population, (see Figure 5). The annual growth rate of the Omani population is 3.7%, compared to 4.7% for expatriates. Most of the expatriates are male and at working age, which represents about 83% and 95% of the total expatriates, respectively. The male to female ratio of Omani population (1.2:1), and for expatriates is (4.8:1), (see Figure 6).(NCSI 2015) The total fertility rate is 3.7 live births per women with age ranged from 15 to 49.

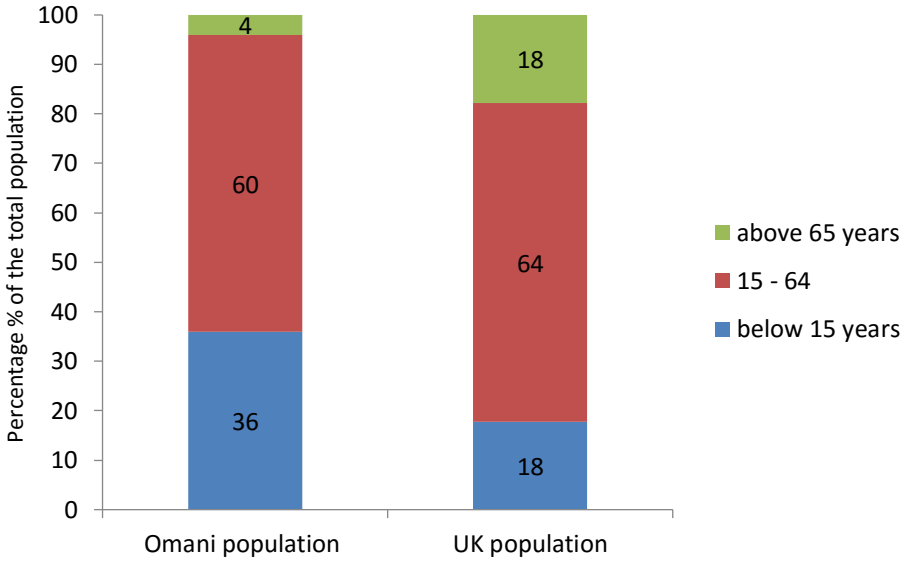


Figure 5: a comparable chart of the population age range between Oman and UK; data obtained from (NCSI 2015) and (ONS 2013).

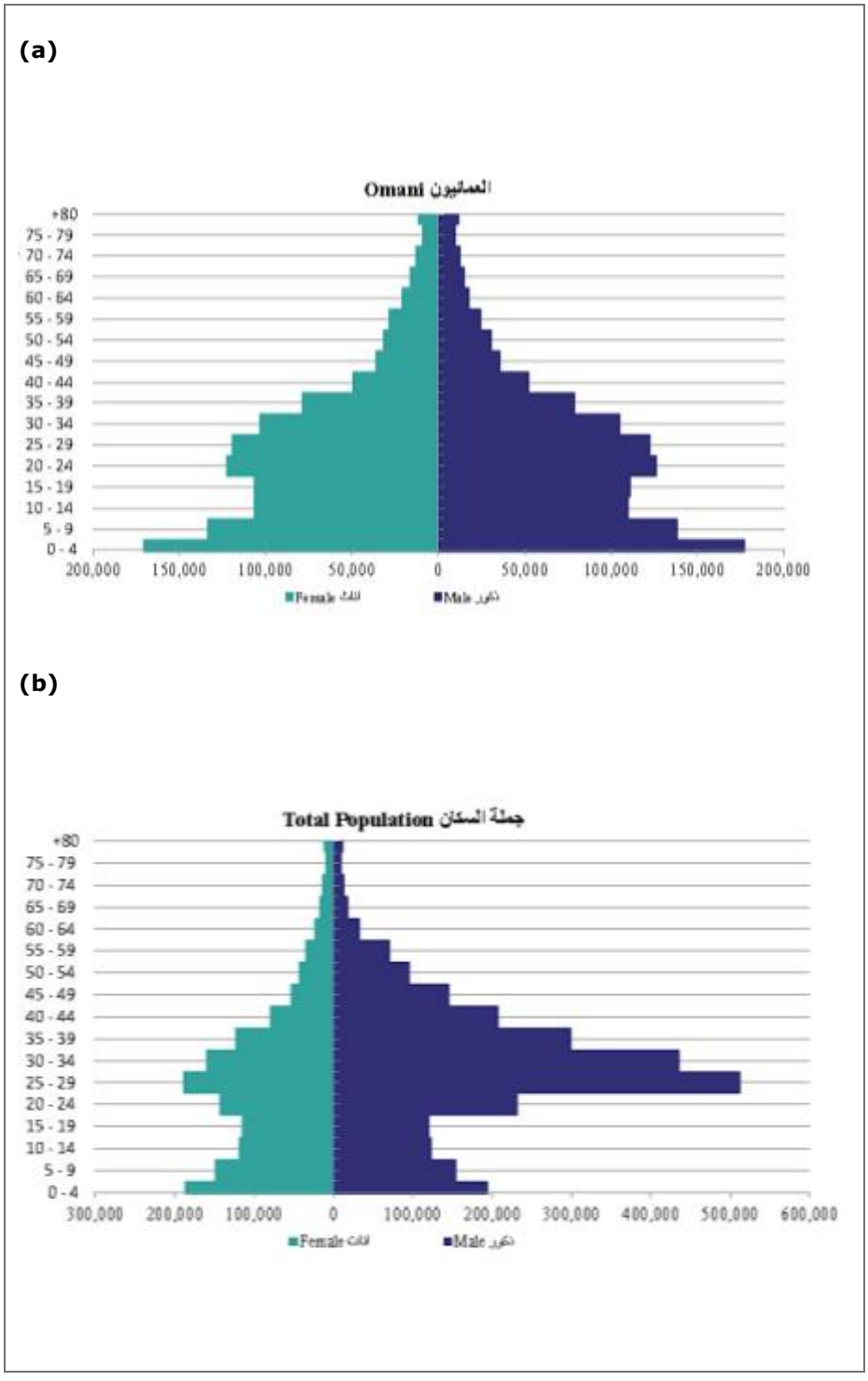


Figure 6: population pyramid of (a) Omani, (b) total population. Adopted from (NCSI 2015)

3.1.3 Resources and finances

The Sultanate is classified as a high-income-economy country.(WBG 2016) The income of the country comes mainly from oil and gas resources. This accounts for 82% of total export earnings and 84.7 % of government income; of which signifies about 50% of Gross Domestic Product (GDP). The economic growth therefore is highly depending on the oil and gas prices.(Oxford Business Group 2015, NCSI 2016) However, to sustain the development wheel as per the strategic plan of the country, the government recognised the importance of investing in non-oil resources, which was encouraged after the significant decline in the price of crude oil in 1998, and again in 2015. Since then, the government has given a significant consideration to diversification, industrialisation, and denationalisation for the development of the country. It aims to reduce the contribution of the oil sector to 9% of GDP by 2020. Tourism and gas-based industries are key components of the government's diversification strategy. In addition, the government is taking the initiative to further expand the private sector through industry, agriculture, fishing, textiles, Information Technology (IT), health services and higher education. The government also recognises the need of training the Omani human resources to meet the market need for skilled and competent national workforce via the "Omanisation policy"; that is fundamental for the sustainability of the economic growth and development.(Al-lamki 2000) It is a nationalisation strategy of the human resources adopted by Oman and other GCC countries to overcome the challenge of the shortage of trained national workforce to meet the market needs.

3.2 Oman healthcare system

The healthcare system in Oman has gone through a tremendous and rapid development in the last 45 years since his majesty Sultan Qaboos ruled the country from the "Day of Renaissance". Before 1970 there were only two hospitals, both located in the capital city;

one was opened by the American Arabian Mission in 1935 and the later was under the administration of the British Consulate, with a total of 10 clinics, 12 beds and 13 physician and a ratio of one physician per 50,000 of the population.(Alshishtawy 2010)

The Ministry of Health (MoH) was established in 1970 as the first official health organisation in the new era of Oman. It became and remains the main regulatory and governor organisation for the health system and services in the country. The health system is predominantly funded by the government (78.7%) and is considered the highest among all GCC countries. The remaining funds are very limited to insurance companies (8.2%), out-of-pocket spending for direct purchase or cost sharing (13.1%).(Oxford Business Group 2015) The health expenditure accounts for 2.7% of the country GDP, and about 7.2 % of the total governmental expenditure.(MoH 2015a) Healthcare and services, including medication, are free for all Omanis and expatriates working in the government sector, who are only required to pay a minor fees for annual registration equivalent to one Omani riyal and 0.200 Omani riyal per visit, corresponding to approximately (=£2) and (= £0.4) accordingly, as based on February 2017 exchange rate. The MoH also funds citizens to get treatment abroad if required, with a limited allocation of funds available per year.

Today, the Omani healthcare system is divided into three main sectors: government provided by the MoH, government but not-MoH, and the private sector. Figure 7 illustrates the sectors of healthcare system in Oman. The government healthcare services are divided into primary care, and secondary or tertiary care, which provide specialised and advanced treatment. Primary health centres (PHCs) are the gatekeepers to access advanced healthcare. There are 195 health centres distributed over the health regions based on population density; 13% of them are considered as extended health centres, which have specialised outpatient clinics and about 38% are health centres are with beds.(MoH 2015a) The hospitals that provide secondary or tertiary healthcare comprise only 38% of the total number of hospitals i.e. Regional and Wilayat (district) hospitals.

The remaining hospitals provide primary care services only i.e. local hospitals. There are only four regional hospitals, located in the capital city operate as referral centres for all critical cases referred from all over the country.

Non-MoH-government hospitals and clinics provide healthcare services to their employees and their families, which includes: Sultan Qaboos University Hospital (SQUH), the Royal Oman Police Hospital (ROPH), the Armed Forces Medical Services (AFMS), and Diwan Medical Services (DMS). The development of the private sector has been remarkable in the last decade, and in 2015,the private sector consists of 448 general clinics, 288 specialised clinics and polyclinics, 15 hospitals and 604 community pharmacies.(MoH 2015a)

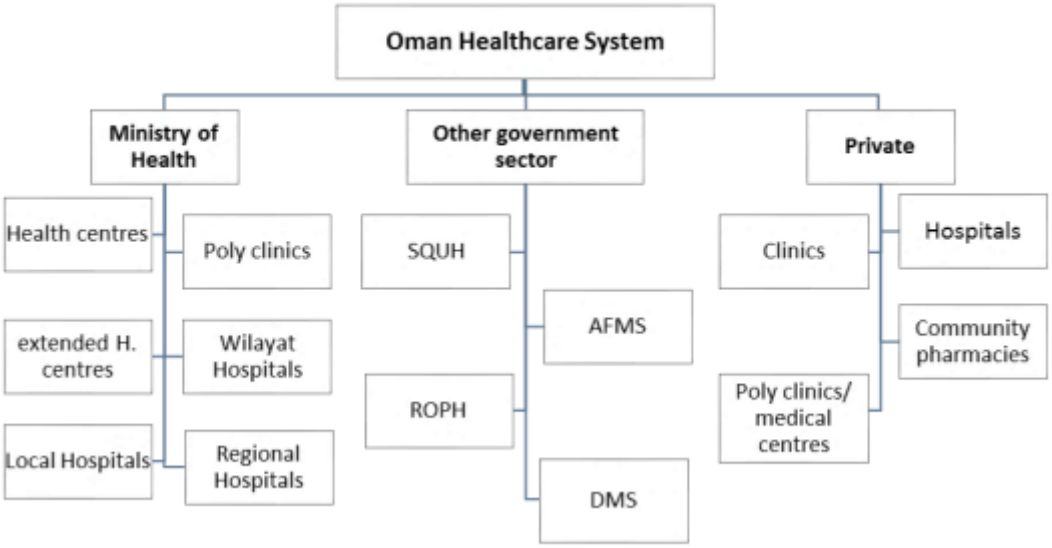


Figure 7: the organisational chart of healthcare system in Sultanate of Oman

The government has encouraged the private sector to become a partnership with the government in delivery of inpatient and advanced health services, which is essential to maintain the sustainability of the health system. However, the private health sector does

not effectively integrate in achieving the Omani health strategy when providing the health services to the public, the effective contribution of the private health sector to healthcare delivery has been slowly growing and therefore is limited. For example, any critical cases, or cases that require advanced treatment will need to be transferred to the government hospitals. The new MoH vision is to "have 50%-50% partnership by the year 2050 with the private owning and running 50% of health services, especially expensive inpatient services".(MoH 2014) At the present the MoH provides 62.2% of the outpatients and 94.5% of inpatient services, and The MoH beds represents 78% of the total beds in the healthcare system.(MoH 2015a) Table 1 summarises the number of hospitals and beds in different health sector.

Table 1: number of hospitals and beds in different health sectors. Data obtained from MoH (2015a)

Health sector	Number of hospitals	Percentage of beds (n)
MoH	49	78% (4821)
Non- MoH	5	14% (888)
SQU	1	7% (452)
Armed Forces Medical Services	3	6% (354)
Royal Oman Police Medical Services	1	1% (82)
Private	15	9% (582)
Total number	**66**	**6178**

3.2.1 Vital health statistics

In the early seventies, communicable diseases and under-five child mortality were at their highest levels. Therefore, the top agenda in the MoH early strategic plan was improve the overall health of the population. The MoH was successful in targeting the health problems and a significant improvement in basic health indicators were achieved. There were significant reductions in infant and child mortality rates, increases in overall life expectancy and improvement in the delivery of health services, (see Figure 8). The mortality rate of children under 5 years declined from 181 cases per 1000 live births in 1970s to 12 cases in 2010, as per 1000 live births; and the infant mortality rate also dropped from 118 to 10 cases per 1000 live births, in the same years, respectively. Malaria was one of the most common communicable disease with 32,000 cases reported in 1990 and this has significantly declined to 1,518 cases a year; and most of current cases registered are imported cases only. Consequently, the overall life expectancy at birth raised to 72.4 compared to 49.3 in 1970.(MoH 2015a)

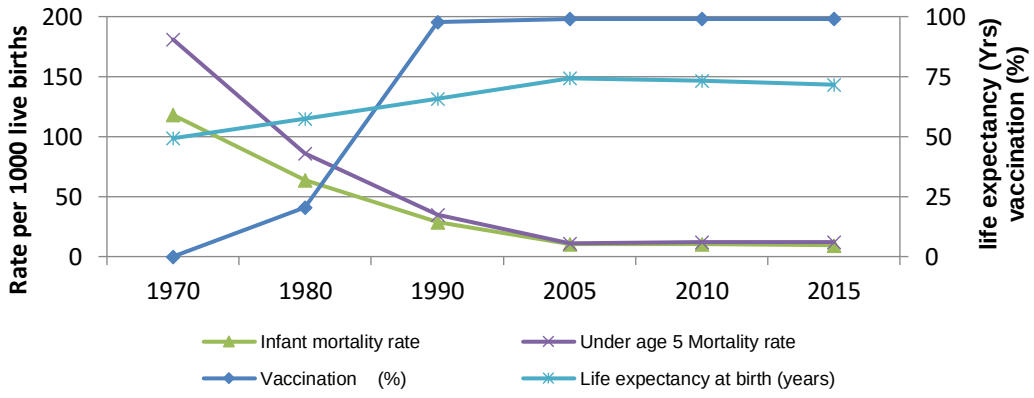


Figure 8: health status indicators of Oman 1970 – 2015. Data obtained from MoH annual health report(2015a)

The Ministry of Health has adopted several strategies to control communicable diseases and has shown a remarkable success in reducing the burden of the communicable diseases to its lowest level, e.g. Malaria, vaccination-related diseases. Though, Non-communicable diseases (NCDs) have started to rise again and it doubled the health burdens, and became the leading causes of morbidities and mortalities in the country.

During the past two decades Oman has witnessed an epidemiological transition to non-communicable diseases and other morbidities. This epidemiological transition could be attributed to several factors which are: (i) the intense control activities directed towards communicable diseases and consequently decline of related child and overall mortality, (ii) demographic changes in the Omani population directing toward aging because of increase in the life expectancy and reduction in fertility rate; and (iii) the modernisation of the country and hence the improvement of the socioeconomic status and tendency of the public toward busy and unhealthy lifestyle behaviours. This resulted in the obesity rate rising and reaching 22%, in line with the western countries. Moreover, diabetes has become one of the most common morbidities in the country with a prevalence rate of 15%. (Oxford Business Group 2015) Other current adult co-morbidities include: coronary heart diseases, hypertension, cancers, chronic kidney disease and stroke. NCDs are estimated to account for 68% of the total deaths, as cardiovascular disease is the leading cause which accounts for 33% of total deaths. Road traffic accidents (RTAs) are also considered a national crisis as it affects the young adult males, which could have an economic and social impact on the population. In 2010, a total of 1,127 deaths were reported with a rate of 31.1 per 100,000 of the population. The Omani rate of road traffic accidents was found to be higher than the world average in 2009, which was 21.(MoH 2014) Other significant health burdens include malnutrition, hereditary blood disorders and congenital abnormalities. (WHO 2014, MoH 2015a)

Oman has the second-highest rate of cancer among the GCC countries. The total number of cancer cases in Oman between 1998 and 2007 was reported to be 8890 cases, and incidence was expected to raise by two-fold by 2020.(Al-Madouj et al. 2011) In 2011 there were 1289 new cancer cases registered in Oman compared to 949 in 2010.(Al Bahrani 2014) Breast cancer was found to have the highest prevalence in females, and colorectal cancer in males.(WHO 2012)

Hereditary blood disorders are widely spread among Omani populations. Data from 2012 showed that 6% of the Omani population have sickle cell anaemia, and 2% are diagnosed with Thalassemia (Beta). In addition, G6PD deficiency is common in male (25%) compared to the female (10%). Congenital anomalies accounts for 21.6% of cases of infant mortality in the country. The two reasons which considered the most related to the increase of these types of blood and genetic disorders are consanguineous marriages, more than 50% of Omani marriage and the survival of people with blood disorders infected with malaria.(Al Tauqi 2012, MoH 2014)

3.2.2 Human resources

The rate at which medical services are delivered to all citizens has risen rapidly, with the public-sector accounting for 74.3% of the total health workforce, compared to 18.4% of the workforce in the private sector. However, for the pharmacy profession, 70% of the pharmacists are working in the private sector compared to other healthcare professions. In 2015, there were a total of 8914 doctors, 19331 nurses, 2131 Pharmacists, and 1970 assistant pharmacists *(for more details about pharmacy workforce, see section 3.3.4)*. Table 2 summarises the ratio of the health workforce per 10,000 of the population in Oman. The health workforce has increased in the last five years by 41% for doctors, 57% for pharmacists, 35% for nurses and only 8% for assistant pharmacists. Figure 9 illustrates the numbers of the health workforce among the different sectors between the year 2011 and 2015. The low growth and reduction in recruiting the assistant pharmacists

could be because of (i) the government direction toward implementing patient care and recognising the role of pharmacist in this area, and (ii) the increase of the number of the private community pharmacies in the last 5-7 years and therefore more pharmacists are recruited to manage the pharmacies.

Table 2: health human resources indicators. Data obtained from MoH annual health report (2015a)

Indicator/per 10,000 populations	Total	MoH
Doctors	21.4	15.4
Nurses	46.3	35.3
Pharmacist	5.1	1.3
Assistant Pharmacist	4.7	3.4
Dentist	2.8	0.9

The regulation of the healthcare system is complicated in Oman. The Ministry of Health regulate both sectors; but national guidelines and standards are not well enforced in the private sector and therefore considerable variation in the clinical practice between the two sectors is observed. There is no independent body to support the healthcare workforce professions or to provide the support required for professional development or continuing education.

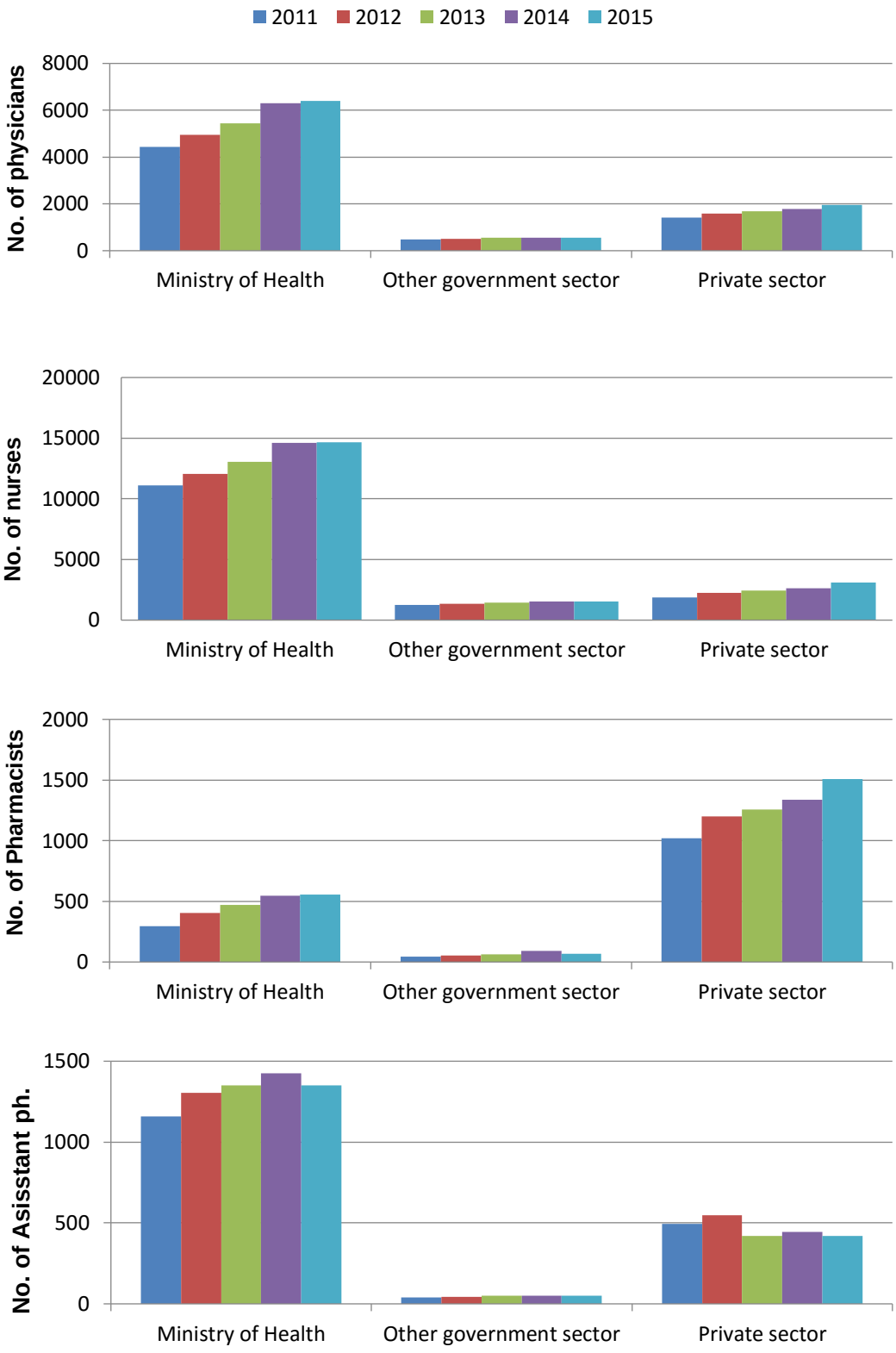


Figure 9: distribution of health workforces among the healthcare sectors in Oman. Data obtained from MoH Annual report (2015a)

As part of the country's vision about nationalisation, discussed earlier, MoH aimed to nationalise the health workforce by supporting the education of both the health and allied health professionals by providing national and international scholarships. Therefore, several education and training institutes were established in the country for nursing, health sciences, assistant pharmacy and medical record technology. Several national colleges and local institutes were established to train local medical health professions. Until 2000, there were only one college of medicine in the country under the Sultan Qaboos University, which was the only public university. In 2001, The Oman Medical College, which is a private institution, was established to contribute for the development of medical human resources in the country. This currently contributes to about 200 national doctors joining the health workforce per year. Most of the Omani nurses are graduated from a number of national institutes, both government and private, with an annual graduation of more than 500 per year.(MoH 2015a) The Omani nurses have reached 65% of the total nurses working in the government sector. (Treacy 2014) However, specialised training remains one of the challenges in developing the health system that require time and resources. Thus, a high number of oversees professional workforce are recruited to overcome the shortage in trained and specialised national medical workforce. Most of the overseas professional workforce are recruited from non-Arabic speaking countries within south Asia, and few from other Arab countries e.g. Egypt.

3.2.3 Access and utilisation of health services

Primary healthcare is the backbone of the healthcare system and the first point of access to the public healthcare services, the health centre is providing a basic care for the citizens and distributed within few kilometres from people's homes. Today, it is acknowledged that more than 95% of the public is within few of kilometres of a health centre, where they can get basic care.(MoH 2014) The typical pathway of all Omani citizens to healthcare is through the health centres in the working hours and through emergency departments (A&E) in out-of-hours. Expatriates who are not working in

government sectors and/or Omanis who have a medical insurance normally utilise the private clinics and hospitals. However, Omanis who are willing to pay out-of-pocket also can use the private health sector. The prescription issued by the public health sector is dispensed free of charge from onsite pharmacies, that are available in every government premises that provides healthcare services. Private prescriptions are supplied through community pharmacies, which is the main role of this sector. The service provided by the community pharmacy was found to be drug-product oriented and observed as a source of easy access to medicine or medical equipment.(Al-Abdullatif 2014)

The Omani healthcare is not a tax-based system and all Omanis are eligible to access the public health services free of charge. Expatriates living in Oman should be medically insured by their employer. With the primary care centres facing a continuous demand for access and long waiting times, as it is the only pathway to access free healthcare treatment, the government introduced a nominal charge for an outpatient visit in 1998. This temporarily helped to decline the outpatient visits, for example there was a 25% reduction in 2000 compared to 1995.(MoH 2014) the report suggested that this helped to reduce unnecessary visits to the health centres. However, this was based in a statistical report of the number of visits without providing details of the reason or presentation of the symptoms. With the increase in demand to access healthcare and long waiting times, there was a significant growth of private medical market in the country over the last few years. Community pharmacy, unlike the system in UK, only serves the private sector, as all the government prescriptions are dispensed free of charge on onsite pharmacy. However, they are more pharmacies and pharmacist are working in the private sector, which have extended working hour services. Although the government provides treatment for the Omani people, Omani people were found to comprise 46% of the 45,654 patients treated at private medical facilities in 2012. The private sector shares about 37.8% of the burden of outpatient services.

3.2.4 Strategies and health development

The organisational structure of the MoH includes three undersecretaries who assist the minister with the affairs related to planning, healthcare services, and administration and finance. The planning strategy in Oman is a five-years-plan policy, and the health sector has witnessed a substantial improvement within the 45 years of a series of five-years-term reform. The Ministry of Health started its first five-year health development plan in 1976. The first three 5-year plans concentrated on the construction of health services infrastructure. Whereas the later are focusing on preventive care, decentralisation and sustainability of the health services.(Alshishtawy 2010)

The national health policy for the years 2011 – 2015 stated many goals in relation to the quality of healthcare services, development and training of the national workforce and prevention of diseases and public health. It also emphasised the need to encourage the involvement of private sector in healthcare and develop a good collaboration between different healthcare organisations in the country.(MoH 2011)

"Health Vision 2050: Quality Care – Sustained Health" a conference organised by the MoH in May 2012 to review the achievement to date, evaluated the current situation of healthcare in Oman and addressed the obstacles or challenges that can threaten the sustainability of a high-quality healthcare. The aim of the conference was to review and set out the strategic framework for the development of the health services in Oman for the next coming 35 years.(Al-Riyami 2012, MoH 2014)

3.2.5 Challenges of the health system

Aging and NCDs are the challenges facing the Omani health system and are going to change health status in the coming decades. This is accompanied by an increase in non-communicable diseases and diseases of the elderly and thus increasing the need for

expensive health services. Primary care is currently geared toward acute care rather than management of chronic diseases, and this will require supporting the healthcare profession workforce in developing their role in the management of chronic conditions. GPs alone will not be able to manage the continuous demand of providing more advanced care in primary care. Requiring a multi-professional approach in delivering the healthcare, pharmacy profession can collaborate in delivering better patient care through a number of medicine services within their competency includes: management of minor ailments and provide medicine counselling or even review patient medication.

Transferring the care of non-communicable disease and on-going shortage of trained and specialised human resources in primary care is a challenge to domestic provision of specialty care. In addition, the country struggles with lack of timely services in some areas, which contributed in noticeably to the growth of Omani people who looking for private healthcare treatment either in the country or abroad. This requires considering a new model of care that targets the prevention and long-term management of NCDs that needs allocation of tasks and multidisciplinary integrated care, that allows improvement of the utilisation of skills of healthcare professionals other than the doctors.

3.3 Pharmacy in Oman

3.3.1 Overview

The profession of the pharmacy is rapidly growing in Oman, and the awareness of their role in improving healthcare by the policy makers is increasing. The number of pharmacists has increased more than three-fold to reach 2000 in 2014 compared to 662 in 2003. Before 2001 all pharmacists were trained abroad; pharmacy education is at a development stage in Oman and therefore little research is available in pharmacy practice or pharmaceutical sciences. The clinical role of the pharmacy profession is better

recognised in the government health sector compared to the private sector (e.g. community pharmacies) where the role remains to deliver product-oriented pharmacy services. Pharmaceutical science and drug discovery is not mature in Oman; there is only one pharmaceutical company that manufactures generic drugs that are exported to some of the neighbouring countries.

3.3.2 Pharmacy-related regulation and policies

The first pharmacy law was enacted in 1996 (via the Royal Decree No 41/1996) and was repealed by the new pharmacy law in 2015 under the Royal Decree No 35/2015. The Directorate General of Pharmaceutical Affairs and Drug Control (DGPA&DC) governs pharmacy practice, which is the main regulatory and authority organisation responsible for pharmaceutical law and its implementation. It is responsible for (i) the licensing and inspection of the pharmaceutical establishments, and pharmacy workforce (pharmacists and assistant pharmacists); (ii) the registration of pharmaceutical companies and its products, pricing, post marketing surveillance, and regulating the dealing of narcotic and psychotropic drugs; and (iii) the drug quality control and analysis. The Directorate General of Medical Supplies (DGMS) is the organisation responsible for the supply and distribution of medicines, medical and laboratory equipment to all MoH institutions e.g. hospitals and health centres. It is also responsible for identifying and facilitating the training and support for the pharmacy workforce for better delivery of pharmaceutical care and services.

The Directorate of Rational Use of Medicine (DRUM) was established in 2000, with a concern of the MoH of medicines' misuse at a policy level, and the WHO 1996 recommendation to establish a team in MoH to monitor the use of medicines.(Jaffer 2007) The Directorate are promoting rational use of medicines through (i) providing awareness and education programme on rational use of medicines for the community and the healthcare professionals, (ii) conducting research and audits to provide the higher

authorities with recommendation and intervention for improving the practice related to rational use of medicines.

Oman Pharmaceutical Society is a professional association registered under Ministry of social development, and established in 2007. It aims to improve the profession of pharmacy in the country, however it does not have any regulatory role toward the pharmacy profession. The main role is to be involved in providing or organising activities for the health professional and community toward effective and better use of medicines.

3.3.3 Medicine supply and regulation

The Omani pharmacy law emphasised that at all pharmacies should be managed by at least one licensed pharmacist and with the help of the required number of licensed assistant pharmacists; who are working under the supervision of the pharmacist. The pharmacist should be present all times; however, the law allows the assistant pharmacist to manage the pharmacy for a short period of time in the absence of the pharmacist, within the terms and procedures specified by the regulations. It is rare to find a non-trained or qualified staff working in a pharmacy premises.

The medicines in Oman are classified into two major classes: non-prescription-medicines, and prescription-only-medicines (POM). Dispensing and purchase of medicines is performed in pharmacies only, which has to be carried out by a licensed pharmacist or assistant pharmacist. The pharmacy-only-medicines classification are not well defined in Oman, as most of the OTC medicines are available only to purchase from pharmacies; except for Panadol and Panadol Extra, but not other paracetamol generics, that can be found in some retail shops. In addition, various medicines can be purchased from community pharmacies without the need for a prescription, including medicines for long-term conditions. The regulatory body has banned the activity but no strict regulation is

imposed. The regulation of supply and dispensing of controlled drugs are closely monitored and audited by the regulatory authorities.

3.3.4 Workforce and legalisation

The 2015 annual health report of the Ministry of Health showed that there is a total of 2131 pharmacists and 1970 assistant pharmacists in Oman which represent a 5.1 pharmacists and 4.7 assistant pharmacists for every 10,000 of the population, respectively. However only 30% of pharmacists are working in the government sector, compared to 70% in the private sector. Whereas it is the opposite for the assistant pharmacists with the majority working in the government sector, (see Table 3). The Omani Pharmacy profession is highly represented in the government health sector compared to the private, that has a very low Omanisation (Nationalisation) rate. It is important to note that there is a shortage in the number of pharmacists working for the government, and some government onsite pharmacies may not have a pharmacist in some working shifts. These pharmacies are therefore managed by assistant pharmacists.

Table 3: statistics of pharmacy profession in Oman.(MoH 2015a)

Sector	**Pharmacists**		**Assistant Pharmacists**	
	Total	**Omani (%)**	**Total**	**Omani (%)**
MoH	554	84%	1434	70%
Non-MoH*	70	67%	58	86%
Private	1507	1%	478	1%
Total	**2131**	**25%**	**1970**	**54%**

*Does not include the data of Armed Forces Medical Services

Pharmacists and assistant pharmacists should fulfil the pharmacist licensing condition to practice in the country this includes: (i) completion of a bachelor's degree or equivalent (diploma in pharmacy for assistant pharmacist), (ii) passed the prometric (licensing)

exam, (iii) completed the training hours (3 years of experience for overseas applicant), and (iv) any overseas applicant to be registered with the pharmacy council or association in the country of origin.(DGPA&DC, undated) Not all the pharmacy staff have to sit the licensing exam as it is only for practicing pharmacy and therefore any pharmacist who joined the academic or administrative sector immediately after graduation did not have to take the exam.

3.3.5 Pharmacy Education and CPD

The provision of pharmacy education is limited in the country. Until recently, the national pharmacy workforce had to obtain their pharmacy degree from overseas universities. Today, there are a number of public and private institutes that offer pharmacy degrees. The first institutes were run by the Ministry of Health in 1991 and offered a diploma in pharmacy degree, which has been upgraded into a Bachelor in Pharmacy degree in 2015. Another public institution that offers a diploma in pharmacy degree is the Pharmacy Department at Higher College of Technology, established in 2003, and under the supervision of Ministry of Manpower. The first school of pharmacy that offers Bachelor in Pharmacy degree was established in 2001 by Oman Medical College in academic partnership with West Virginia University.(OMC 2015) The second programme is offered by the University of Nizwa, which was established in 2004 and has two programmes: B.Pharm and Diploma in Pharmacy.(University of Nizwa 2017) There are no postgraduate pharmacy courses offered by the schools of pharmacy in the country, however, Sultan Qaboos university (SQU), which is the only public university in the country, is offering an MSc in Clinical Pharmacy, and recently a postgraduate doctoral degree as a part of pharmacology and clinical pharmacy programme under the school of medicines and health sciences in association with the department of pharmacy of the SQU hospital.(SQU 2017) However, with a very limited intake that does not exceed two per a programme (no reference for data is available). Most of the pharmacy graduates are still obtaining their higher education from overseas universities in Europe, America and Australia, through government scholarships.

Unlike the pharmacy assistant or pharmacy technician qualification programme that are known worldwide; the assistant pharmacy programme, in Oman, is a diploma in pharmacy with a minimum of 3 years study in extensive pharmacy related curriculum.(HCT 2016, University of Nizwa 2017) The two private universities, mentioned earlier, are also offering an Assistant Pharmacists Bridging Programme, for those who would like to enter the pharmacy profession. However, there are no standard or clear sets of criteria for the enrolment to this programme, and it is currently offered for those who are willing to pay out-of-pocket.

Continuing professional development (CPD) was introduced in 2006 as an integral requirement for staff appraisal, promotion and incentives. Oman Medical Specialty Board (OMSB) is an independent governmental organisation responsible for the regulation, and accreditation of the CPD activities in Oman. CPD in Oman is a credit point system that needs to be achieved at the end of each cycle and it is mandatory for all healthcare providers. Although there are well developed and structured courses and continuing education programmes offered by the OMSB for the physician, there are limited CPD training or activities for the pharmacy profession in general or any other healthcare professionals that are working in the private sector.(OMSB 2017) The Department of Pharmaceutical Care under the Directorate General of Medical Supplies implemented a CPD programme in 2010, and is providing a number of events to fulfil the learning needs within the pharmaceutical care area. Although the MoH are aiming for a mandatory CPD for all healthcare professions, it is still not strictly applied as a requirement for license renewal or competency appraisal for the pharmacy profession. In general, the CPD practice is not mature in the country and most of the activities are limited to organised conferences or symposiums that is not tailored to the individual’s learning needs.

3.3.6 Pharmacy Practice

The practice of pharmacy in Oman is mainly product oriented and concerned with medicine supply and dispensing the doctor's prescription for the patient. The clinical role is very limited and usually associated within a hospital setting delivered by clinically trained pharmacists who have usually obtained a Master degree in clinical pharmacy. Therefore, with no clinical pharmacists working in the primary health sector or the private community pharmacy, the clinical role therefore is very limited and highly dependent on individual initiatives. Almost all the community pharmacies have no access to patient medical history or to their medicines database. The National Drug Policy highlighted that the professional contribution appears to be limited in the private "community" pharmacies; and the pharmacists has little role as a professional advisor.(DGPA&DC 2000)

The interest in implementing pharmaceutical care emerged in 2005 by the Executive Board of Health Ministers' Council for GCC states – which is amended recently into Gulf Health Council for Cooperation Council States- at the 58th conference which aiming to improve the standard of pharmacy practice in the gulf to the international level.(Gulf Health Council 2014) The recommendation of the meeting stated the importance of establishing a department of Pharmaceutical care in each MoH of the GCC members. The GCC committee was established in late 2005, and the standards of practicing pharmaceutical care was approved by 2007 and distributed to all GCC countries to be implemented in their strategic plan and drug policy. In 2005, there was one clinical pharmacist in the MoH, however the ministry set an agenda to have one clinical pharmacist per 50 beds. Today it is expected to have 3 – 5 clinical pharmacists in MoH hospitals in Muscat and at least one clinical pharmacist in the hospitals in other regions (no published data available). The MoH also highlighted in its seventh strategic plan, the need to evaluate the situation in the private sector and identify the reasons of not implementing pharmaceutical services in this sector. This was also discussed at the 2011 meeting of the GCC executive office and the standards for the pharmacy care were

approved and circulated to members of GCC.(Gulf Health Council 2014) A recent review of the situation showed that pharmaceutical care practice within the gulf countries is still limited to hospital care and is largely absent in the primary care setting including community pharmacy.(Kheir et al. 2013)

3.3.6.1 Hospital Pharmacy

The pharmacy services in the government hospital sector are rapidly developing in Oman. The involvement of the clinical pharmacists in inpatient pharmaceutical care is increasing. Most of the clinical pharmacists are trained abroad to obtain a Master degree in clinical pharmacy, and as a result there is still a shortage in the number of clinical pharmacists to cover all hospitals. Therefore, to overcome the shortage of clinical pharmacists, some health institutes allow pharmacy graduates to attend the wards after providing them with the required training.

Currently, the hospital healthcare team members recognise the role of the clinical pharmacist. They are therefore involved in providing medicines information for healthcare professionals and patients; attending medical rounds and counselling the patients about their medicines; plus other services related to safe, effective and economical use of medicines e.g. drugs and therapeutic committees. The challenges facing the implementation of clinical pharmacy is the lack of a policy to describe the role, responsibilities, and the position of clinical pharmacy within the healthcare team. Therefore, this concept is not fully and effectively developed in all sectors and the clinical pharmacy services can vary between different institutions.

3.3.6.2 Community pharmacy

There are more than 600 privately owned community pharmacies in Oman, of which some are attached to private polyclinics or hospitals that operate as onsite and community pharmacies. Services provided by the community pharmacies are the traditional services,

which includes dispensing of medicines and sale of health-related products; and as the time of this writing, no advanced or specialised clinical services are provided. Community pharmacies are located nearby the community; and as most have extensive working hours and are convenient and accessible by most of the community. However, absence of a clear "white-paper" or "blueprints" for the pharmacy profession to meet the Oman health vision 2050 make it difficult to predict the future role that community pharmacy can play in providing patient care. Therefore, identifying the factors that can influence the development of the services provided by the community pharmacies to meet the public or patient needs is important. Little research is conducted in pharmacy practice or community pharmacy and therefore improvement research is required in this area.

3.3.7 Primary healthcare and pharmacy services

The clinical role of pharmacists and pharmaceutical care, in Oman, is still developing. It took almost 10 years for the health policy makers to identify the crucial role of pharmacists within the healthcare team in effectively improve medicine-related problems and improve patient healthcare. Evidence indicated that pharmaceutical care and clinical pharmacy is much more developed in hospital settings than in primary care or community pharmacy. Advancement of the clinical role of hospital pharmacists could be as a result of associating the delivery of pharmaceutical care with the requirement of having a clinical pharmacy degree; as most of the clinical pharmacists in Oman are working only in hospitals.

The clinical role of the pharmacist in primary care is still not well defined and immature. A few years ago, most of the onsite pharmacy located inside the health centres had no pharmacists and were managed by assistant pharmacists only. Extending the role of the primary care centres and transferring the long-term care of non-communicable disease into the primary setting and identifying the importance of the pharmaceutical care emphasised the need to have pharmacists in every health centre. Pharmacists are now

expected to be involved in the chronic disease management clinics initiated in the health centres, working with the physicians and other healthcare team in improve patients' healthcare through tailored education, medicines counselling and review treatment plans. Unfortunately, no documented information or published literature available on the implementation rate or outcome of these specialised services.

Pharmacists can play a vital role in patient care and are in a good position for educating the patient on medicine-related issues and working in collaboration with physicians in optimizing use of prescribed treatment and improving patient care. However, with the lack of pharmacy practice research in Oman, and the absence of a clear strategy for the future role of the pharmacy in primary care; it is important therefore to perform health system studies to find how the community pharmacists (including the primary care pharmacists) can effectively contribute in the healthcare delivery in Oman.

4 Study Rationale

Self care and patient empowerment have become a vital component of modern healthcare to improve health outcomes and reserve resources. This review shows that there is a knowledge gap in understanding the Omani public experience in self care in general and utilisation of the community pharmacy for self care of minor ailments. Despite that, there are onsite pharmacies, in every public healthcare premises, for patients to collect free medicines. There has been a dramatic increase in the number of community pharmacies, which have also extended their working hours. However, we don't know how and when the public utilise community pharmacy.

The clinical role of the community pharmacy is not effectively utilised in primary care and there are no published studies exploring the perception of the public to the community pharmacy profession in Oman. With the lack of pharmacy practice research in the country, it is important to understand how the public responds to their illness or symptom(s), and their experience in managing their minor ailments; for example: What action they take? What is the source of the advice they receive? Why and how they self-medicate? Hence, this may help to understand the role of the healthcare professionals e.g. community pharmacy in person's experience with the management of minor ailment and identify gaps for improvement in the primary healthcare and community pharmacy profession. Understanding how and why patients choose to seek help from a doctor or a pharmacy, and using this understanding to improve the services that are provided can help us to provide better care for patients and make more appropriate use of resources in the healthcare system.

The aim of the project is to provide a conceptual understanding of the public and primary healthcare professional experience and perceptions to self care and utilisation of the primary healthcare services. Through the conceptual and empirical findings, the project is aimed to strength and improves the clinical role of the primary care pharmacy profession

in Oman, by taking the self care of minor ailments as an example. It ultimately could provide a conceptual model for the related stakeholders to guide the development of the pharmacy profession to improve patient care.

5 Aim and Objectives

The aim of the study is to understand the factors that influence self care of minor ailments by identifying public and professional perception and attitude toward self care and self-medication of minor ailments in the Sultanate of Oman. The objective of the study is to:

1. Identify the public's attitudes to self care and self-medication.

2. Identify the public's perceptions, needs and experiences regarding the management of minor ailments.

3. Examine the public's and primary healthcare provider's relationships with regards to self care of minor ailments.

4. Explore patient's knowledge and expectations of healthcare providers in the primary care setting.

5. Identify GP's and pharmacist's attitudes toward minor ailments, public empowerment and self care.

Chapter 2: Methodology and Method

1 Introduction

The main principles of a research paradigm are ontology, epistemology, methodology, and method. It is suggested that the first three principles of a research paradigm lead to the research approach to be quantitative, qualitative or mixed methods based on the researcher's philosophical stance and assumption to answer the research question(s). In this chapter, I will explain the research methodology, ontology and epistemology and how this determines the paradigm positions in this research. Then I will explain the research methods.

2 Methodology and Epistemology

Studies in social health science are divided into two broad approaches; quantitative and qualitative. The choice of the research method is said to be determined by the epistemological assumption of the researcher. Epistemology is defined as the "theory of knowledge" and it is the "way of understanding how we know what we know".(Given 2008) It is concerned with providing a philosophical assumption underpinning the decision about what kind of knowledge is possible and how we assure it is rigorous and legitimate. The two main continuums of epistemology are positivism and interpretivism. Interpretivist researchers are found to have a constructivist epistemology, where they believe that reality is constructed from the social setting of studied phenomena. On the other hand, Positivists believe that truth is single and objective and can be measured or tested regardless of the variation in social context studied.

Ontology is "the study of being" and it is referred to how reality is seen. The two edges of ontology are "realism" and "relativism". Realism considers reality as single and objective that is independent of individual perceptions. Whereas with relativism, it is argued that the reality is multiple and subjective, and is constructed by individuals.(Given 2008)

Ontology and epistemology have been the topic of debate in the philosophy of social health research; the argument of adopting a positivist or interpretivist research approach in answering social science inquiry in health studies is linked to a researcher's stance within the research paradigm. Therefore, the researcher has to explain and identify his/her stance and how this determined the choice of methods and approach used in answering the research question i.e. quantitative, qualitative or mixed method. (Creswell 2014) The philosophical paradigm or assumptions underpinning this research are discussed and defined in the next section of this chapter.

2.1 The philosophical paradigm underpinning this research

The aim of my research project is to explore perceptions of the public and healthcare professionals towards self care and management of minor ailments in Oman. It aims to explore individual's beliefs and views on the aspect of self care and their behaviour in responding to minor ailments and what factors influence this behaviour. Max Weber argued that people differ from natural sciences and that we should understand social action and people's behaviour to be able to improve it or change it.(Benton and Craib 2010)

Research in related health science has relied on the positivist approach of research to understand the real world whereas the researcher has to measure reality in a way that is objective and unbiased. When studying people, it is difficult to assume that people's attitudes and actions can be studied in a controlled environment. Therefore, it is argued that using a positivist epistemology that thinks of the reality being independent of human activity can be problematic for social research. Social research in health sciences recognises that an interpretivist approach can yield a better understanding of the social world and people behaviour for better healthcare.

Qualitative research involves an interpretive, naturalistic approach to the world and this allows studying things in their natural settings. (Norman and Yvonna 2013) It seeks to answer questions that stress how social experience is created and give meaning. Quantitative research emphasises the measurement and analysis of causal relationships between variables, but not process.(Benton and Craib 2010)

Quantitative researchers take the stance of realist ontology believing that reality is objective and value-free. Social health scientists argue that although the reality is out there and needs to be found, they explain that the knowledge of this reality is "value-laden" and socially constructed. This approach was described to form the bridge between two extremes of ontology; that has been advanced by Bahasker (1989), Hammersley (1992) and Maxwell (2011a), who argued that: *"critical realism combines realist ontology (the belief that there is a real world that exists independently of our beliefs and construction) with a constructivist epistemology (the view that our knowledge of this world is inevitably our own construction, created from a specific vantage point".(Cited by Barbour 2013)* Critical realism is a post-positivism movement in social sciences, it agrees with the positivist that there is a world of events out there that is observable and independent of human consciousness, but the knowledge about this world is socially constructed.(Norman and Yvonna 2013) Critical realism, therefore, holds that individuals and social practices cannot be studied in isolation.(Krauss 2005, Cruickshank 2012,

Norman and Yvonna 2013, Walsh and Evans 2014) Being a pharmacist with a science background and studying social context to improve health services and better patient care, I find that taking a critical realist position is compatible with social health sciences and research. Therefore, the knowledge of reality is "value-laden" and can't be understood independent of the social actors.

2.2 Qualitative research

The qualitative method helps researchers to study social phenomena in their setting with minimal distribution to normal activity (control of variables) i.e. naturalistic research.(Hammersley 1990, Bryman 2004) It is used to explore and understand the meanings of the studied topic described by an individual or a group of individuals. Unlike quantitative research that undertakes the approach of testing a pre-defined hypothesis or objective theories, qualitative research is known to be an inductive style, i.e. generating a hypothesis or theory emerging from the data. There are different data collection strategies that can be applied when the researcher is taking a qualitative research: Interviews, observation, document analysis, etc. In this research, interviews were chosen to explore the experience of the studied context toward the self care of minor ailments.

2.2.1 Interviews in qualitative research

The two main techniques of qualitative data collection are individual and focus group interviews. Both can be used in exploratory and descriptive studies, and have been widely identified as a research tool in pharmacy practice research. Hence the choice of one over other is determined by the researcher assessment of the appropriateness of the technique in answering the research question, taking the consideration, the challenges associated with each research tool. Focus group, compared to individual interviews, have the advantage of including more participants and gathering information in a shorter time

scale. However, they are more useful when the researcher is interested in studying the interaction of participants or discussing a subject that is common to the participants involved.(Smith 2002, Bryman 2004) The opinion of dominant participants over the voice of reluctant participant can skew the findings and this one of the limitations of the focus group.(Bryman 2004) Other logistical and practical issues associated with the focus group are for example, but not limited to, find a time and venue location that all the group participants agree on, people may tend to express what is accepted or expected as a culturally-norm rather than their individual views, some people may not feel comfortable to discuss some issues in a group setting. Therefore, Individual interviews were selected for this study as it was found to be more suitable for the purpose of obtaining in-depth understanding of individual's experiences and perceptions.

The types of interviews are: structured, semi-structured and unstructured interviews. Structured interviewing is usually used in quantitative survey studies to obtain standard responses to the interview questions. Conversely, unstructured interviews do not have a topic guide and are commonly used in ethnographic research during participant observation as free communications. Unstructured interviews tend to be more difficult to manage and are consequently less suitable for novice researchers.(Bryman 2004) Therefore, a semi-structured interview guide is commonly used to assure flexibility in conducting the interview and at the same time, the elements of the research questions are not missed, and this is imperative when the researcher will only interview that participant once during the research. Having flexibility within the interview guide is also important to develop an effective interaction with the participant during the conversation, by selecting questions that are related to the individual interviewed and hence yield a deep understanding of his/her experience.

2.2.2 Qualitative data analysis

The analysis of qualitative data mainly involves: codes, categories, and themes, (see Figure 10). The coding, which is the initial phase of analysing interview transcripts, is the act of attaching a label to small units of the study data. Subsequently, the codes are then grouped into larger codes, namely, categories, which are then grouped into a general theme i.e. descriptive theme. In grounded theory method of analysis, the themes are scaled up to build a theoretical explanation and correlation.(Urquhart 2013) Thematic analysis is a commonly known approach in analysing qualitative data of an exploratory research. However, there are different approaches to undertaking thematic analysis in grounded theory.

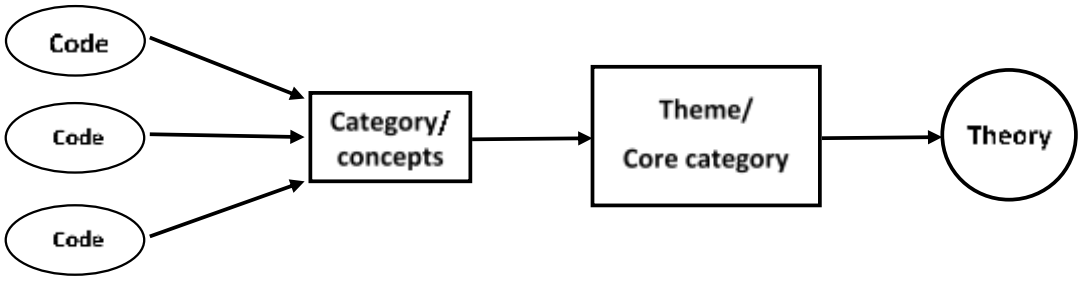


Figure 10: coding procedures in qualitative data analysis

Grounded theory when first found by Glaser and Strauss in 1967 in their book "The Discovery of Grounded Theory" was a general methodology; and Glaser and Strauss considered neither the epistemological nor the ontological positions at that time. Their aim was to move the qualitative researcher from describing the data to generating a theory that they explained as "closing the embarrassing gap between theory and empirical research".(Strauss and Corbin 1994) However, it was claimed that the first generation of grounded theory suggested an "objective" qualitative approach methodology.(Hammersley 1990, Charmaz 2005, Bryant and Charmaz 2007) Glaser took

a positivist standpoint and stressed the grounded theory toward the objectivism direction; the researcher to be an unbiased observer where the theory is discovered but not constructed by the researcher.(Charmaz 2005) Glaser tried to make the qualitative research fit in a time whereas the realism positivist scientific research had a strong stone in research validity. The developments and modification of grounded theory in the last decades tried to move the grounded theory from naïve realism epistemological assumption.

After the deviation of Glaser and Strauss, Strauss with Corbin published a book that provides the researcher with a procedure and guidelines manual for conducting grounded theory. (Urquhart 2013) The Strauss grounded theory emphasises the use of qualitative data analysis "QDA" technique or procedures that were argued to not emphasise the "constant comparative methods".(Charmaz 2006) Charmaz and many other research scholars (e.g. Seale, Bryant, and Clarke) aimed to direct grounded theory towards constructivism. (Charmaz 2005) Charmaz (2014) stated that "*the constructivist approach perspective shred notions of a neutral observer and value free expert*". Thus, the theory is constructed rather than discovered from the data. It will help in taking a reflexive stance and not locating oneself outside the reality. In a constructed grounded theory, the researcher's experience and the social condition cannot be ignored as "value-free" and insulated when he/she analyse the data.(Charmaz 2005)

Charmaz's approach to the grounded theory addressed irrational assumption of the blank mind of the researchers and acknowledged the researcher's preconceptions on constructing the knowledge obtained of the studied context. This was explained that the researcher could not access the field with an empty mind; he/she should be open-minded and minimize the influence of the preconception when entering the fieldwork. It managed to address the place of literature and the researcher values when analysing the data.

Grounded theory is a flexible method and has evolved under different epistemological paradigms, however, it shares the core characteristics, that include: (i) theoretical sampling, (ii) constant comparison process, (iii) different level of coding that start with open, line by line coding to consider all possible meaning and have the codes emerge from the data, and (iv) theory. Constructivist grounded theory is found to be more compatible with the epistemological assumption of social sciences and health research, which was identified in some literature as "engaged" or "critical grounded theory". This approach has reshaped the methodology and defied the criticism of classical grounded theory related to: (i) researcher's preconception and subjectivity, (ii) emerged theory, and (iii) theoretical saturation. It is taking a middle position within naïve realism and radical constructivism, which closely reflect the philosophical assumption of the social health researcher. This modified approach to grounded theory does not neglect the researcher's pre-theoretical assumptions and preconceptions, but emphasises that these should not be enforced on the data collection and initial analysis. It also recognises the retroduction approach of the researcher when referring back to the literature and existing theory in enhancing the study findings with previous work. Therefore, the researcher has to be explicit as how their own pre-existing theoretical or literature knowledge influences the forming or the development of the study theory. In addition, the researcher does not necessarily come with a new or general theory, but more of explanatory theory of the studied context and could be developed or refined - based on the emerged findings- with the existed known theories. In constructivist/modified grounded theory, theoretical saturation has been reframed to embrace the fluidity of knowledge created. The understanding we gain is partial and temporary because the social world is complex and constantly changing. Therefore, the saturation achieved was presenting the full understanding of the concepts, at that time of the inquiry, and great explanation of the formed theory.(Kennedy and Lingard 2006, Oliver 2012, Belfrage and Hauf 2016, Hauf 2016)

In my research, I found applying the principles of grounded theory adopted by the second generation i.e. constructivist grounded theory is suitable to answer the research questions. The core elements of grounded theory, with regards to data collection and analysis helps to collect findings that are strongly emerged from the data by exploring the people experience and reveal the unknown factors to the researcher. As a pharmacist and PhD researcher, I cannot pretend to enter the fieldwork with a blank mind, choosing to do this research was not a coincidence and my interest on this particular topic already formed earlier preconceptions and assumptions. In addition to fulfilling the academic requirement the researcher as myself needs to be exposed to the literature and related documents and theory in the process of rationalising the research questions. However, the researcher needs to commit to an inductive and creative approach when collecting and analysing the data; as Dey (1993) referred to when he discussed the difference of "*open mind and an empty head*".(cited by Urquhart 2013) Therefore I made sure to be explorative and open minded so as not to hinder the influence of my perceptual knowledge and belief when answering the research questions. Likewise, doing a PhD research to be completed in a pre-defined time and it is difficult to achieve theoretical saturation. The social world is complex and constantly changing; therefore, I do not believe it is possible to claim that theoretical saturation was reached, rather it is more accurate to say that data saturation was reached. Consequently, the level of the theory developed is a theoretical explanation to understand the studied context, it is not generalisable since it is context specific and can be further tested and examined.

After explaining the approach of the grounded theory adopted for this study, I am going next to list and discuss the principles of the grounded theory used in the analysis of the data, and illustrated in Figure 11, as following:

Coding: in grounded theory, the coding process is divided into stages of open (initial) coding, focused/selective coding or theoretical coding; although there are no sharp boundaries between the stages in the actual practice. Open coding is the initial stage of

the coding process; close line-by-line reading of the data is often suggested in a search to identify as many ideas and concepts as possible without concern for how they relate. This usually produces a large number of codes that need to be further examined and refined. In focused coding, as more interviews are carried out, the emergent codes are further explored, some codes start to dominate and stand out and these can be clustered into concepts and categories and their connection be examined. This reconceptualises the concepts or categories into broader, more abstract categories to form conceptual themes. Further focus on particular links and relationships among the formed codes or categories is referred to as theoretical coding, newly discovered codes or the refinement of existing codes may prompt the researcher to reread the data or assess newly acquired data which is known as the constant comparison process.

Constant comparison process: is a vital process used in collection and analysis of qualitative data in grounded theory. It is a repetitive review process used to go back and forth to review and compare the developed codes and categories across individual cases or group of cases. Further, it facilitates the process of redefining the codes and emerging of conceptualised categories and themes as the study progress.(Bazeley 2013) Comparing the cases for similarities and differences will help for better understanding and explaining of the negative or contradicting cases. The process of constant comparison also aids the researcher to compare and examine how the conceptualised categories are related to one another or to the available literature or policy documents, as "all-is-data". This afterward to be clustered into groups under a general concept or theme.

Memos: Keeping memos and notes is an approach of reflecting on the research process and analysis; it helps the researcher in his/her understanding of how the prior self-assumption, attitudes and beliefs build the knowledge and the findings of the study.(Given 2008) Memos help to understand how the concept and the relationships formed, it is advised to date and references the codes to monitor how the ideas are evolved. This also helps to keep track of how the categories formed and connected

during the analysis process and led to the development of the final explanation in a written report.

Theory: it is a process of scaling up the finding beyond descriptive themes by explaining the correlation or relation between the core concepts and themes**.** In a modified or critical grounded theory study, the development of new original theory it is not always the case. The researcher can compare, elaborate or modify the pre exisiting theories with the emerged concepts or theory from the studied context. "*The validity of the theory in critical realist perspective is therefore not simply evidenced in that theory's capacity to predict accurately, it requires an explanation of how the mechanism is bringing about the event of outcome and how is that mechanism is impacted by local conditions at the time*" (Sayer, 2000). The theory generated from the studied context is more of building a structure for the emerged concepts to find an association or a relationship, rather than having descriptive concepts of data. The theory generated from the studied context is constructed from the data and our reflection on the experience and interaction with the studied world, therefore it does not go beyond local or substantive theory, it may be true for the studied phenomena but may not be general or final.(Bazeley 2013, Urquhart 2013) Hence the theory built in this study cannot be claimed as a general theory, yet a middle-range explanatory theory specific to the studied context in relation to the management of minor ailments and utilisation of primary healthcare services.

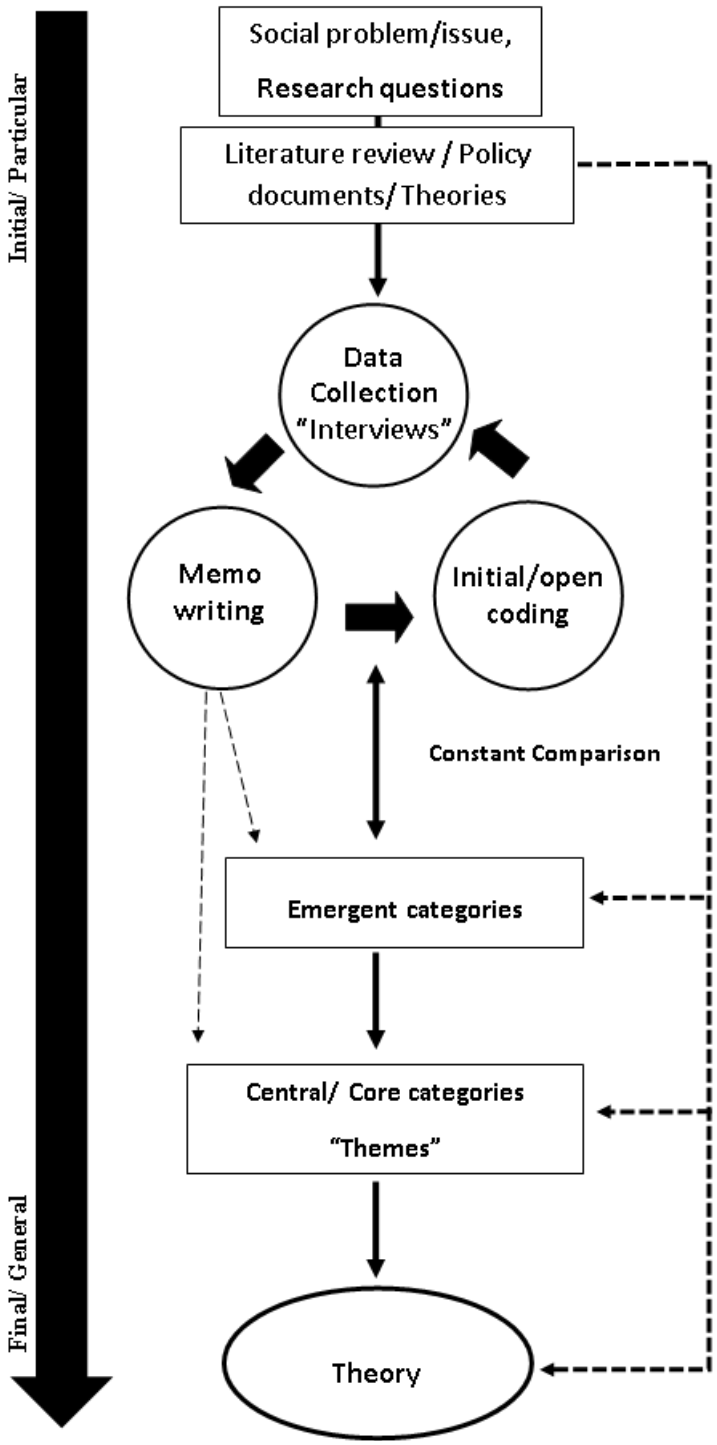


Figure 11: the study model of qualitative method and data analysis, using the principles of modified grounded theory.

2.3 Rigour and qualitative inquiry

Qualitative research has latterly become recognised as a useful research method in social health sciences. However, it has not yet established a strong position in this area compared to quantitative research. One of the debates associated with that is the validity and reliability of the qualitative study. The critics of positivist research raise concerns about the quality of qualitative research, since it is not generalisable, biased, unsystematic and unrepeatable, how therefore anyone can examine the rigour of the claimed findings.(Mays and Pope 2000) Qualitative researchers defended that you cannot ignore the human problems and research questions that do not fit the research design of the positivist.(Charmaz 2014) So this is why validity and reliability are important measures to accept the knowledge found in any research. So how does the qualitative researcher address this claim? Next, I am going discuss the two measures and address this.

2.3.1 Validity and Reliability

Validity is considered an essential indicator of the quality of the study. It indicates if the method or the instruments used accurately measured what the research question has aimed to measure and if the "truth" was correctly identified and described. (Golafshani 2003, Given 2008) Reliability is defined how the findings of one study can be consistent if repeated over time and are generalisable.(Golafshani 2003)

In qualitative research the terms credibility, trustworthiness, and transferability are preferably used to demonstrate the credibility of the research. They have said that it is a term that encompasses both i.e. the reliability and validity; since this can't be viewed separately in qualitative research.(Golafshani 2003, Norman and Yvonna 2013) Trustworthiness is an umbrella term that can be thought of as the ways in which qualitative researchers ensure that transferability, credibility, dependability, and confirmability are evident in their research.(Given 2008)

One of the approaches to improve the quality of research is by explaining clearly the epistemology and the method of the research, this will give another reader a clear understanding of how the knowledge was formed. Pope and May(2000) also proposed other techniques that can be considered to improve the quality of the research which includes: triangulations, reflexivity, respondent validation, attention to negative cases and fair dealing. Studying the concept from different perspectives i.e. the public and healthcare professionals can be considered as a way of triangulating the findings. It is said to be "*a way of ensuring comprehensiveness and encouraging more reflexive analysis*".(Mays and Pope 2000)

2.3.2 Reflexivity

Reflexivity is to reflect on how the researcher's prior assumption and the process of data collection and analysis formed the findings.(Mays and Pope 2000) As Sayer (1992) stated, "*In order to understand and explain social phenomena, we cannot avoid evaluating and criticising societies' own self-understanding*".(cited by Eakin et al. 1996) Therefore I found it was important to discuss my identity at this point.

The researcher is the main instrument or tool in this type of research that could influence the insights about how I see and understand the world and will influence the different stages of the study i.e. from developing the research questions, through the data collection and analysis and to the end of writing up. Therefore, the identity of the researcher (personal and professional biography and beliefs) should be explicit as a part of the self-reflection process and identifying oneself position within the research.

I am an Omani woman who has lived in Oman since birth, but obtained my entire undergraduate and higher education in the UK. After I completed my school I have been sponsored by the Omani ministry to obtain my pharmacy degree in Scotland. On completion, I had the opportunity to join a national programme to train new graduates to

become an academic, and was sponsored by the employer (Ministry of Manpower, Oman) to obtain a master in clinical pharmacy from the same University. During my professional journey, I only had a limited experience in practice, with few weeks spent in a community pharmacy and out-patient-department in a hospital pharmacy during summer holidays of MPharm study. Before joining the MSc programme, I had one year of hospital experience, which was in two of the largest hospital in the country: Royal Hospital and Sultan Qaboos University hospital. After I obtained my MSc degree, I then proceeded to work as an academic at the Higher College of Technology, teaching pharmacy practice for a diploma in pharmacy programme for almost six years. As part of the school vision was to prepare the students to practice in the community pharmacy and primary care, I became increasingly self-analytical and reflective during my teaching the new generation of the pharmacy profession and their role in the primary care sector. I was questioning the unwillingness of the students to join this sector and their feedback I received of limited utilisation of their clinical skills, or the low appreciation of the community to the pharmacy profession. This therefore developed my interest in primary care and mainly in improving the services or role of the community pharmacist in patient care. My background education and awareness of the advancement of the role of the pharmacy profession in the UK, for example, reflected on my interest in studying this area to better improving the role of the community pharmacist in primary healthcare. With further exploration and with the help of the supervisors to advance my research interest, exploring the experience of the public with the self-management of minor ailments and the role of the pharmacy became the growing area of interest and manifested itself in the research questions posed within this thesis.

There was limited research literature or published studies in the country with regard to pharmacy services and patient experience of utilisation of the primary care sectors for the management of minor ailments. Therefore, by studying this area, I hoped it might be possible to attain a better understanding of the setting and develop a model/explanation that would help stakeholders to recognise and understand for better utilisation of primary

healthcare services for the management of minor ailments. Consequently, improving the patient care in this sector by recognising and improving the role of pharmacy profession if appropriate.

In the first year of joining the PhD programme, I completed the recommended courses to gain the understanding and knowledge of research methods, this helped to extend my exposure to the other paradigm approach of research i.e. the inductive and interpretivism research methods. I found this could be more appropriate when considering the difference of the culture and system that could limit the transferring a different country system that could not fit because of the context variation. Therefore, exploring the patient and healthcare professionals experience using a qualitative research could of reveal a hidden perspective and factors that could not be explored if a quantitative study was used to come up with the recommendation to improve the practice based on the society need.

I also found that sharing a similar culture identity and familiarity with the studied context facilitated the conduct of this research. Sharing the same culture and language of the participant is important in sharing and understand their experience of the studied topics and views toward the system and organisation. Sharing the same language also helped to understand the Omani-Arabic dialect used in the community and overcome of the issue related to having an interpreter in the cross-culture research.

Being an academic and an Omani, helped me to be in a neutral position toward the community and to the healthcare system. Although having a professional background in pharmacy, but not being practice based, I did not feel myself as a true insider within the healthcare system, or to the frontline healthcare providers. On another side, neither a complete insider for the users of the healthcare services, because of my professional knowledge and background. This neutral position, therefore helped me to have a better general observation, aiming to find a better improvement for both the profession and the

citizen, without having pre-determined agenda. To minimise the risk of researcher power and influence, I decided to introduce myself as a researcher from the University of Nottingham, without revealing my professional background.(Mullings 1999, Elwood and Martin 2000) I also wanted to put the participant in a power position equal to myself; this, in my opinion, will help the participant to speak freely, and limit the risk of hesitation about providing a true and complete opinion. In addition, I tried to eliminate any prediction of thought raised by the participants toward myself of being a member of any regulatory organisation or being in a judgmental position. I thought it was important that the participant knows the aim of the research is for a better understanding of their experience that can help to come up with a recommendation for the related bodies to be considered rather than assessing or reporting their attitude and practice.

2.4 Translation consideration

Gathering data in a language that is not English requires a textual transformation of the data into English through the process of translation. Translation is an interpretive act and meaning may get lost in translation. Hence, the qualitative researcher seeks to study meaning in subjective experiences; the researcher has to understand the importance of representing the findings without losing the meaning of the concepts translated.(Al-Amer et al. 2016) In the translation process, the equivalent is the central concept of translation. The aim of the translation is to translate the text of the sourced language (SL) to its equivalent in the target language (TL) without losing its meaning i.e. conceptual equivalence.(Kashgary 2011, Im et al. 2016) However, with some words or text that are cultural or spiritually related to the studied context e.g. metaphors, idioms or even words; the equivalent word in English may be available, but the full conceptual meaning will not be delivered to the English-reader. This is one of the challenges with regards to the translation in cross-language research.

2.4.1 Challenges of Translation

When translating there is a concern to maintain the conceptual meaning. Some references discuss the use of non-equivalence in the translation of these types of words or texts i.e. metaphors, culturally or spiritually related words. In translations using the theory of non-equivalence, the translator either rephrases it to form a text that has a meaning in English while maintaining the cultural meaning. This can be challenging especially when trying to translate back the text to the source language; or when the participants see that the written words are different from what his/her spoken words.(Van Nes et al. 2010, Al-Amer et al. 2016) Another approach to translation which I found to be more appropriate is using the equivalence strategy whenever it is possible and provide an explanation or footnoted explanation to convey the cultural meaning to the English-reader.(Kashgary 2011) In the case of international idioms, the English version was used in translating the Arabic similar idioms. Otherwise, the proverbs will be translated, and explanation of the meaning will be given so the English-reader can understand the full meaning. Examples of metaphors and proverbs (idioms) translated in this study are summarised in appendix 20.

Hyponyms are also one of the challenges in Arabic – English translation. Examples discussed by Kashgar, 2011 were "degrees of temperature", "times of the day".(Kashgary 2011) Examples of hyponyms extracted from research transcripts are family relationship e.g. uncle, cousin, nephew and niece. For example, the English term for uncle indicates a second-degree male family relationship that could be a brother of one of the parents. However, in Arabic, different terms are used to distinguish the mother's brother from the father's brother. In the translation of hyponyms, it was decided to use the equivalent word in English supported by a description of it to convey the precise meaning, e.g. uncle (mother side, or mother's brother).

2.4.2 Timing of the translation

Some literature discusses the best time to translate the material i.e. at the beginning of the data preparation before starting the analysis or at the writing stage of the findings after the concepts and themes were generated. (Van Nes et al. 2010, Santos et al. 2015) Van Nes et al. (2010) proposed to delay the translation and stay in the original language as much as possible. Because of the argument related to the psychology and philosophy of language that "language to be an aid in thinking"; and the analysis will have a possible limitation if the researcher did not use their mother tongue. The other advantage of delaying the translation to the end is to avoid the use of fixed one-word translation with a research team who do not speak or understand the source-language. This as Van Nes et al. explained delaying the translation of the transcripts allows using a fluid description and reflecting on the interpretations of the findings by going back to the source data and allows more transparent interpretation process.(Van Nes et al. 2010) On the other hand, Regmi et al (2010) advised that translation of the data before the analysis process will make the research process more rigorous and avoid the mistranslation caused by only translating the key categories and theories.(Regmi et al. 2010) So what will be the appropriate to adopt with regards to translation?

As a research student with limited experience in conducting interviews and doing the initial coding of the data, early translation was necessary to be able to discuss the preliminary process of interviewing and coding with the supervisors for improvement. Also, the software available for the qualitative data analysis (NVivo®) does not support the Arabic language which also made early translation essential if I was going to use it to manage the research data.

2.5 Ethical consideration

Ethical approval for the study was obtained from the University of Nottingham Medical School Ethics Committee, who advised obtaining a local approval, (see Appendix 1). In Oman permission to conduct research with health professions is required. The permission was sought from the Ministry of Health ethics committee, which approved phase two of the study i.e. access to healthcare professionals, (see Appendix 2).

The researcher adhered to the code of research ethics and conduct of the University of Nottingham at all stages of the research. The participant information sheet had a contact number in case of misconduct was to be reported by the participants, and no incidence was reported during the fieldwork of the study. Also, the shopping centres had some rules concerning approaching their visitors, that were explained to the researcher when asking for access. The agreement between the administration and the researcher was made to guarantee the access; no report was raised to the administration office with regards to misconduct or distraught experienced by the premises visitor by the researcher.

In accordance with the University of Nottingham's Code of Research Conduct and Ethics, a lone working policy has been set-up with the School of Pharmacy's Health and Safety Officer.(Anon 2016) As the study was conducted overseas; and without direct supervision, I had to complete the assessment before commencing the fieldwork.

As the research was conducted in a country where Arabic is the official language, all the study materials used in recruiting the participants were available in both languages (Arabic and English), that include: participant information sheet, consent form, recruitment card and invitation letter for the healthcare professionals, (See appendix 5 to appendix 14)

3 Method

3.1 Research design and tools

To achieve the aim and the objectives of this research project, two phases were conducted. Both phases used an explorative qualitative method (semi-structured interviews): phase one with the Omani public, and phase two with healthcare professionals working in the primary care sector in Oman. Interviewing both the receiver and provider of healthcare was believed to aid in triangulating the findings and provides better and deep understanding of the studied topic. A semi-structured interview guide for the study was developed for each phase. The interview topic guides were flexible with probing questions asked to follow up on respondent thought and increased the depth of the interview. Table 4 summarises the key areas explored in the interview; see appendix 3 and appendix 4, for the full interview guide.

Table 4: the key area explored in the Interview.

Phase one: public Interview	• Understanding of the concept of self care and minor ailments. • Their attitudes in managing minor ailments and self-medication. • The source of support and access to advice. • Their attitude and experience of consulting the HCPs i.e. GPs and pharmacy staff on minor ailments.
Phase two: HCPs Interview	• Understanding and application of self care of minor ailments in the health system. • Their attitude and role in supporting patient's self care and self-medication. • Their experience in the management of minor ailments and responding to the patient consultation. • The inter-professional relationship and its impact in self care of minor ailments.

3.2 Sampling and selection

The sampling in quantitative research is derived from the laws of statistics and probability to assure randomisation and avoid biased results.(Mason 2002) This is not the case in qualitative research and usually different logic of sampling is used. The aim of qualitative research is to get a thorough understanding of the participant's experience and beliefs of the studied concept. With the amount of data produced and time needed to analyse it, usually the sample size is small in this type of study. In addition, applying the strategies of quantitative sampling in this type of study could be costly and time-consuming, besides the researcher is pursuing to have a thorough understanding of the individual's experiences and related factors rather than the presentation of the issues studied within the studied context. The method of opportunistic and strategic sampling is usually used in qualitative social inquiry. Opportunistic sampling is based on selecting people based on convenience and availability. The strategic or purposive sampling process is related to theoretical and empirical consideration of the research, which determines how the sampling will help in the development of your project arguments and relation of the context studied to the wider population i.e. known as theoretical sampling in grounded theory.(Mason 2002) Snowballing sampling is a chain-referral sampling technique that is used in identifying the next study subjects through the reachable individuals or interviewed participants. It is used when some groups are difficult to access in the setting chosen by the researcher to access the study subjects. A theoretical sampling strategy was used to recruit the sample in this study.

The study topic is a general principle that is believed to be experienced by the public; therefore, the initial stage of the study identified the study group from public places through convenience sampling. Information obtained helped in directing the researcher to identify a group of interest to be interviewed i.e. data collection is guided by theoretical sampling.(Coyne 1997) The number of individuals to be interviewed is difficult to be determined in advance, and the researcher doing qualitative research usually end the

study when data saturation is achieved i.e. this is identified when no new codes or ideas are found.

This study was conducted in the governorate of Muscat; the city of Oman; with 36% of the population lives in this area and it has the highest in population density compared to other governorates. In addition, it is the central area of the country and many of the citizens who live with their families in other governorate are actually working in the city and go back to their towns during the weekends and holidays. This therefore was believed to be a suitable setting for the research.

The general public (phase one) were recruited from public places e.g. "shopping centres"; and the healthcare professionals (physician and pharmacy staff) working in primary healthcare of both the government and private sector were recruited through their institutions. The details of each phase are as follows;

3.2.1 Phase 1- Public Interview

Three shopping centres were accessed to recruit the initial study group (the public). Permission to access the shopping centres were obtained from the administration department of each centre. The researcher introduced herself to participants as a researcher from a university. The researcher explained to the participant invited the aim of the study, answered the individual's inquiry and invited them to participate. Those who were interested, were provided with a participant's information sheet, and the contact details of the researcher, (see Appendix 5 and 6). The individual's contact and demographic details were obtained to arrange for the interview using the participant recruitment slip, (see appendix 7). People who hesitated to take a decision were explained that providing their details will not affect their decision to withdraw from the study later when the researcher approached them; this helped to give a chance to read and understand the participant information sheet and for the researcher to easily reach

them later and give more explanation if needed to take a decision. The interview was arranged in a suitable place that was convenient for both the participant and researcher. An interview room in a college where the researcher was previously working was the suggested place; however, most of the participant chose another place that they found to be more convenient for them, (see Appendix 23). As the study progressed, snowballing sampling techniques were used to purposively interview specific groups of the general population (participants over 50 years and non-working mothers) that the researcher was not able to recruit from shopping centres. By interview number 18 data saturation was achieved, however three more interviews were undertaken to confirm that no more new codes emerged.

3.2.2 Phase 2-HCPs Interview

Healthcare professionals working in the primary sector were identified through their institution. Envelopes that contained participant information sheet, invitation letter, and participation card, were delivered to the person in charge to be distributed to another members of the institutes, (see Appendix 8-12). The participants who agreed to participate were contacted later to confirm the interview time and location. Interviews were scheduled at a time and place convenient for the healthcare staff.

At the initial stage of the study, it was challenging for myself to recruit the healthcare professionals with two healthcare premises approached but the recruitment was not successful and only one participant interviewed but refused to audio-record the interview. Therefore, I had to be less selective and therefore the convenience sampling dominated over the purposeful sampling to recruit the study sample at the initial stage of the study. As the study progressed, purposeful sampling through snowballing technique was used to identify the study participants. For example, more than one healthcare professional from the same institute was recruited and interviewed to compare their practice and attitude as "variation and lack of standard in practice" emerged as one of the codes in the initial

analysis of the data. Also, a GP working in rural areas was identified through their colleague. Data collection ceased once data saturation was reached and this was confirmed by interviewing one more participant from different profession (GP or pharmacy staff) and each health sector (public or private) to confirm that no new codes emerged.

3.3 Data collection

3.3.1 Interviews

Participants who agreed to take part in the study were invited to have face to face interview with the researcher, in a place that was convenient for the participant. Selecting the place and time of the interview by the participant is a way of giving them power and reduce the interviewer effect.(Elwood and Martin 2000) Because of the cultural factors, most of them showed a preference to meet in a public place, although the workplace of the researcher was recommended, most showed a preference to have interviews in a café near to their work or house area. Although the researcher showed concern of the appropriateness and quietness of the area chosen, few agreed to change the place to a quiet office or area in their workplace. Some interviews with housewives and the older participants were conducted in their houses for convenience. All participants gave consent using the consent form, (see appendix 13 and 14), and to be audio-recorded, except for one participant, who refused to give consent for recording the interviews and therefore only key notes were taken by the researcher during the interview. Individual interviews were carried out with the participants except for two healthcare professionals who insisted on having their interviews at the same time (interview No. 14, and identified as pharmacist 14a and 14b). To maintain the honesty of the participants, and the importance of sharing their experience freely and with honesty, I tried to follow some approaches during the interviews to maximise the credibility of the finding; (i) reminded them of their right to withdraw at any time of the study, (ii) there is no right answer and

therefore I am not in judgmental position, (iii) remind them of the confidentiality obligation, however they can ask to pause the recorder during the interview, or delete any content after that, (iv) remind them of my independent status and not being a part of any related health organisation e.g. MoH, and (v) they can contact me after the interview if they wish to withdraw or delete any part of the record that they don't wish to be included as part of the data. During the interviews one participant asked to pause the audio for few minutes between the interview to speak freely about an issue related to the system, but there was no request by participants to withdraw or delete parts of the data.

3.3.2 Field notes and self-reflection Journal

Self-reflection notes "reflective commentary" helps the researcher to reflect on the interview process, impression and thought. In qualitative research, the researcher is expected to reflect on their own experiences as a way of maintaining the trustworthiness and credibility of the method used. This is an essential way of acknowledging and reducing researcher bias and subjectivity. This will help the researcher to re-live the feelings and impressions when analysing the related interviews. It also helps to reflect on the main findings of the interviews and identify codes that need to be further explored, and/or documents the re-emergent codes and recognises if data saturation was reached.(Shenton 2004) Therefore a journal or diary notebook was used to reflect on my experience and thoughts during the fieldwork. This helped to record my impressions after each interview. Writing memos and field notes is also a part of reflective process during data collection and analysis to (i) recorded the repeated pattern of codes or the new codes that raised questions to be further investigation; and (ii) record the process and decision influenced the recording, categorising of the codes into concepts and themes, that build up the final explanatory theory.

3.4 Data Management

3.4.1 Access and storage

Confidentiality of the data obtained was maintained by removing all personal identification information of the participants and replaced by using the interview numbers and gender. Access to the data was controlled and restricted to the research team only which included the researcher (Ph.D. student) and the two supervisors. Confidentiality of data obtained was maintained by removing all personal identification information of the participants and transcripts were identified using interview numbers, age and gender for the public participant; and interview number, professional title and gender for the healthcare professionals. All data was stored securely in a locked filing cabinet and electronic files were protected by a passcode. On completion of the PhD, the original research data will be retained for seven years following the last study publication in accordance with the University of Nottingham governance procedures.(Anon 2016) The identities of the participants were kept confidential during the process of the transcribing, translation and back-translation, and a confidentiality agreement was signed by the individuals who were involved in helping the researcher with the transcribing and translation process (see appendix 15 and 16).

3.4.2 Transcribing process

All the interviews were transcribed verbatim. The researcher started to transcribe the recorded interviews at the beginning of the field work. However, the processes were time-consuming and help was sought with the transcribing process; two individuals helped with the transcribing process, one was recruited to transcribe phase one of the interview transcripts who was an Omani and had a master degree of Arts in Mass Communication from the College of Arts and Social Sciences, at Sultan Qaboos University. Phase two was transcribed by an Omani academic pharmacist working in Oman with a master degree in pharmaceutical microbiology. This helped to reduce the reviewing time of the transcripts

by the researcher against the recorded audio to third the time compared to if the researcher herself had carried out all of the transcribing.

3.5 Translation process

The first few interviews were translated by a certified translator, which was a decision taken to assure the quality of the translation, and save time to have the transcripts discussed and reviewed with the supervisors. However, it was found to be very costly and having limited research resources lead to finding an alternative way of translating the transcripts. Some of the interviews were translated by an Omani PhD student at the University of Nottingham who is fluent in both languages. The remaining interviews were translated by the researcher herself. At the advanced stage of the coding and analysis and the main themes identified, it was decided to do a selected translation of the last few remaining interviews after being coded by the researcher to overcome the limitation in resources to translate the full transcript. All the transcripts translated by either the certified translator or the PhD students were checked by the researcher to assure the accuracy and better interpreting of the meanings.

It is recommended that the researcher discusses the translated text with the translator.(Van Nes et al. 2010) This was considered as a standard procedure after receiving the first translated transcripts to discuss the translation styles or better wording for best translation. The translated transcripts were revised by the researcher once they had been translated by the translator, and feedback to the translator to improve text and translation style, if necessary. This was discussed with the translator at the initial stage of the translation. After that, as the translation proceeded, minor interventions were required with the subsequent transcripts. For the transcripts translated by the researcher herself, a translation glossary was used for common words that was developed by referring to an Arabic – English dictionary and the words of previous transcripts translated by the certified translator.

3.5.1 Back-translation

Back-translation of the translated textual data was carried out to check the accuracy of the translation and make sure that the meaning was sustained after the transcripts had been translated into English (the target language). Since some of the interviews were carried out in English, based on the preference of the participants interviewed, appendices 17, 18 and 19 illustrate the strategy applied to carry on the back-translation i.e. the total number of interview transcripts that were translated at each phase of the study. Although some of the healthcare professionals responded in Arabic during the interviews, their conversation included Arabic and English text. Therefore, the English terms, or sentences were not altered during the translation process. The English text of these transcripts was underlined for the translator who performed that back-translation, so he did not translate it back into Arabic.

This process of the translation and back-translation requires time and resources, which was limited to having a large amount of data. Therefore, the researcher decided to take a sample of the transcripts (10% of the total word count of the translated transcripts) to check the translation process. This was calculated to give a minimum number of interviews to be selected, (see Appendix 17-19). The transcripts of the interviews to be translated backwards to the original source language (Arabic) were randomly chosen by the person who performed the backwards translation. He is an Omani, with a postgraduate degree, who is fluently bilingual, and he is experienced in writing and translating documents in Arabic and English as part of his work. It was explained to him to take a sample of one or two pages from the beginning, middle and end of the interviews. This yielded at the end of more than 10% of the proposed sample, because of two reasons; (i) the variation in content of the interview transcripts and therefore actual word counts/page, and (ii) selecting one more page at the end of the interview transcripts if the last page was less than half in content. The back-translated transcripts were then reviewed by and discussed between the researcher and the backwards translator and compared the back-translated transcripts with the original transcripts.

The backwards translation yielded a good similarity to original transcripts with regards to the meaning of the contents and there was good compatibility in the quality of the translation across the three different translators. There were few words (approximately not more than two words per side of doubled spaced of the sampled transcripts) in the back-translated version "Arabic" that were not similar to the original words in "Arabic", and therefore, had to be changed for better wording and translation. This is expected when the meaning-based approach was applied in the translation of the text into the source language "English", for example "*take medicine"* instead of "*drink the medicine*", since in Omani-Arabic dialect the verb "drink the medicine" is commonly used to indicate taking of oral medicines. Other reasons are related to different grammar, structure and syntax, and vocabulary-equivalence between the two languages, as described earlier under challenges of translation. However, this in general has not affected the overall meaning of the content and therefore it was decided that checking the accuracy of the remaining translated transcripts was not required.

3.6 Data analysis

The coding and analysis of the data were managed by using NVivo® software, provided by the university for analysing qualitative research. The data, as mentioned earlier, were analysed into themes using the principles of modified grounded theory. The main stages of the data analysis followed in this study are: (i) familiarisation with the data, (ii) initial coding, (iii) constant comparison and recording, (iv) development of core concepts or categories, (v) exploration of relationship between categories, (vi) refinement of themes and categories, (vii) Incorporation with previous literature and development of theoretical explanation, and finally (viii) writing the report. As the analysis of the data was started once the fieldwork commenced, it was an iterative procedure carried out to the end of the project, rather than a linear step approach as listed next.

At the initial stage of the study, the self-reflection notes or memos and listening of the interviews during the transcribing process, helped to write down the preliminary codes of words of phrases. Although these codes were not definite, they helped to form sort of analytical consideration to be explored further as the study progressed.(Saldana 2013) Before coding the transcripts, it is important that the researcher familiarises him/herself with the data by reading and re-reading the transcripts. I found that the process of transcribing and translation, as well as reviewing the interviews that were transcribed or translated by others against the audio-record or original text helped to familiarise myself with the data. In the initial coding, a single word, a phrase or a complete sentence was labelled. It is important to follow the principles of line-by-line coding at this stage to allow the codes to emerge from the data i.e. inductive analysis and not from the researcher pre-concepts i.e. deductive-analysis. (Urquhart 2013, Charmaz 2014) The second stage of the analysis is the focus coding. This is the process of classifying or grouping the emerged coded into the core or conceptualised categories. Constant comparison of the transcripts helps to refine and group the initial and particular codes into a core concept or category. By going back and forth within the transcripts of the interviews, I tried to find different or contradicting views toward the formed concepts. Triangulating the different findings within the study stakeholders was helpful in my analysis to uncover the complexity of the different findings and provide a better understanding of the concepts formed. The emerging themes are therefore presented in a way that express the different perceptions of both the public and healthcare professionals to the discussed concept(s).

The process of analysis was revised and discussed with the research supervisors at different stages of the data analysis. At the initial stage of coding the interviews, the coding process was revised and discussed with the supervisors. CA individually analysed some text of the initial interviews and checked them against the researcher code and feedback provided to refine the coding process. Further progress in the data analysis and identification of the themes were discussed and refined in a regular meeting with the supervisors.

Once the initial coding was formed for the first interviews, I further explored the interesting codes with the next interviews to improve understanding. I also went back to previous interviews to compare them with new codes formed as the study progressed. Going back and forth within the cases and comparing the codes helped my understanding and correlating the people experiences and attitudes. This also helped me in identifying the characteristics of people to be interviewed i.e. theoretical sampling. (Explained earlier under the sampling section). This also helped in the next stage of coding i.e. focus coding, which is the process of redefining and cluster the initial codes into categories. Usually the data collection is ended once no new categories of codes are formed. In other words, when data saturation is reached.

Finding relationships between the conceptualised categories is essential to build a theoretical explanation of the findings. This process was carried out once the initial coding process was completed and the main categories were identified. Returning to literature and another related source of information and comparing it with the emerged categories and concepts helped to advance and scale up the coding process and build a theoretical explanation of the findings. Figure 12 in the next chapter summarises the emerged codes and conceptualised themes of the study. I tried different approaches to tackle the complexity of differences and similarities, negative or contradicting cases, and trying to find an explanation and correlation factors between them. Thus, different approaches were tried to visualise and study the data, such as: OSOP (one sheet of paper), or summaries the emerged codes and categories in a framework template. OSOP is used to visually summarise one core category or them in one sheet of paper to help in identifying the correlation between concepts and identifying contradicting or negative cases. (Ziebland and McPherson 2006) After printing the NVivo® codebook of the core categories and the tabulated summary of the findings, I read the codebooks and summarises the main elements in the OSOP format. I found that using the OSOP template was useful to structure the results into a written report. See appendix 21 and 22 for example of OSOP and NVivo® codebook.

Chapter 3: Theme 1: Individual factors, Knowledge and beliefs

1 Results Overview and outline

1.1 Participants' details

The data collection period started on the second year of the PhD, from October 2014 and ended on September 2015. In phase one of the study, three shopping centres were accessed to recruit the public participants. The number of the participant invited to participate were 52, and 21 were interviewed. The age of the public ranged from 19 to 78 years old and nine of the participants were female, (see Table 5).

In the phase two of the study, of the 43 healthcare professionals who were invited to participate, 31 agreed to be interviewed. The 14 interviewed GPs were from private (2 male, 2 female) and government sectors (3 male and 7 female); and had a practicing experience ranged from one year to more than 25 years. The 17 interviewed pharmacy staff were pharmacist (n=13) and assistant pharmacists (n=4) who were working on private or government sector. Nine of the GPs are working as a specialised GP and four of them had completed the family physician programme (FAMCO). Further details of the study participants and location of the interview of phase one and phase two are summarised in Appendix 23 and 24, respectively.

1.2 Results presentation

Quotations are used to illustrate the findings from each emergent theme or category (sub-theme), each interview participant was given a unique identification number with the

public participant coded by the interview number followed by their gender and age e.g. "*Public 1, male, 28 years old*". The healthcare professionals were coded by their work setting and professional titles, followed by the Interview number and gender, as following: Public Health Centre "HC", pharmacist "Ph.", assistant pharmacist "Assistant Ph.", and General Practitioner "GP". For pharmacist working in the private sector they are identified as community pharmacist "Community Ph.", and physicians in the private sector as "Private GP". For example, a male community pharmacist is identified as "Community Ph.14, male"; and a pharmacist working in public health centre as HC Ph.7, male". The digit indicates the number of the Interview.

Table 5: characteristics of the interviewees

Indicators	Classifications	No. (%)
Phase 1: the public		
Gender	Male	12 (57)
	Female	9 (43)
Age range	18-24	4 (19)
	25-44	9 (43)
	45-64	6 (29)
	65+	2 (10)
Education	High School and lower	6 (29)
	University and higher education	12(57)
	Not documented	3 (14)
Phase 2: the Healthcare Professionals		
Gender	Male	12 (39)
	Female	19 (61)
Profession	Specialised GP	9 (29)
	GP	5 (16)
	Pharmacist	13 (42)
	Assistant Pharmacist	4 (13)
Health Sector	Private	13 (42)
	Public	18 (58)

1.3 The main findings

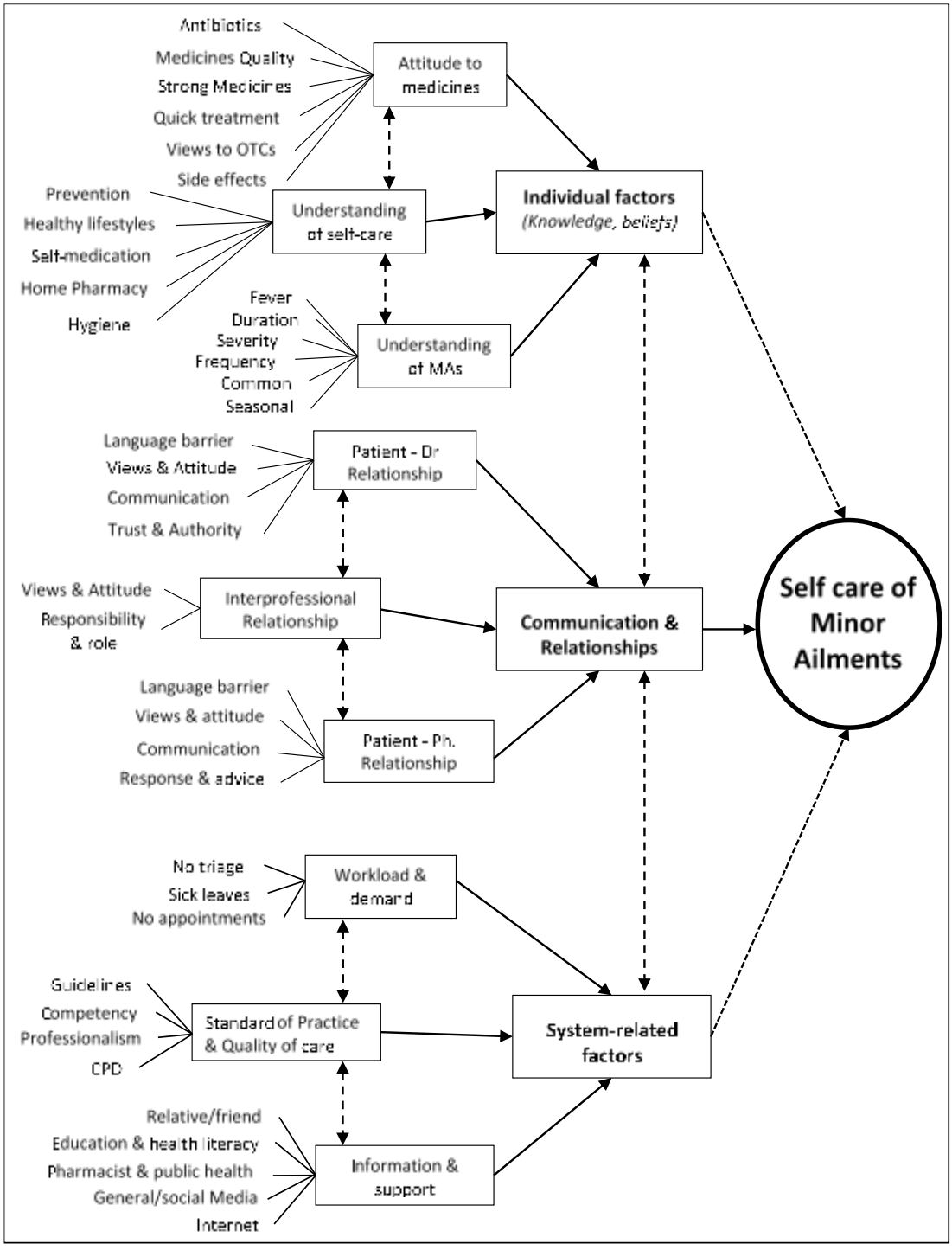


Figure 12: the coding process and analysis of the study data

Figure 12 summarises the emerged codes and conceptualised themes of the study. The three main conceptual themes were found to be interlinked and the relationship between these themes are summarised in the following diagram, (see Figure 13) which demonstrate the theoretical model developed for this study. The diagram represents the following:

- **Theme 1:** individual Knowledge, belief and attitude of the patient, pharmacy staff and the physicians.
- **Theme 2:** relationships and communication between the patient and healthcare professionals and inter-professional relationships and how this had impact on the self care.
- **Theme 3:** factors related to the system and its direct or indirect influence on supporting or optimising the concept of self care on the health system.

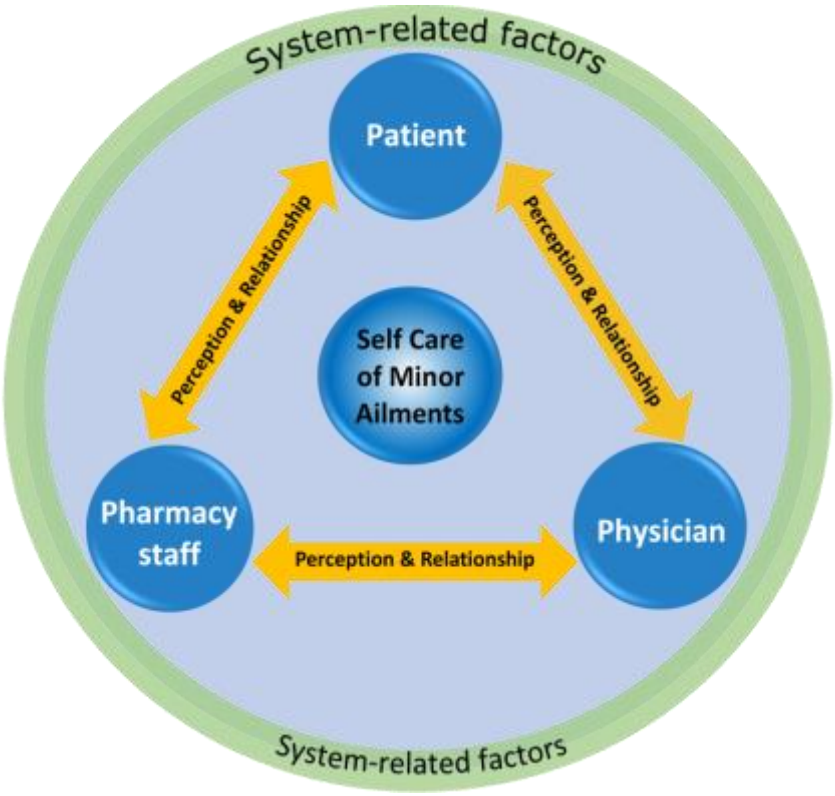


Figure 13: the study theoretical model

The three levels of the factors that influenced self care of minor ailments in Omani health system are going to be discussed in the following chapters. Thus, the layout of the next chapters is summarised as the following diagram, (see Figure 14).

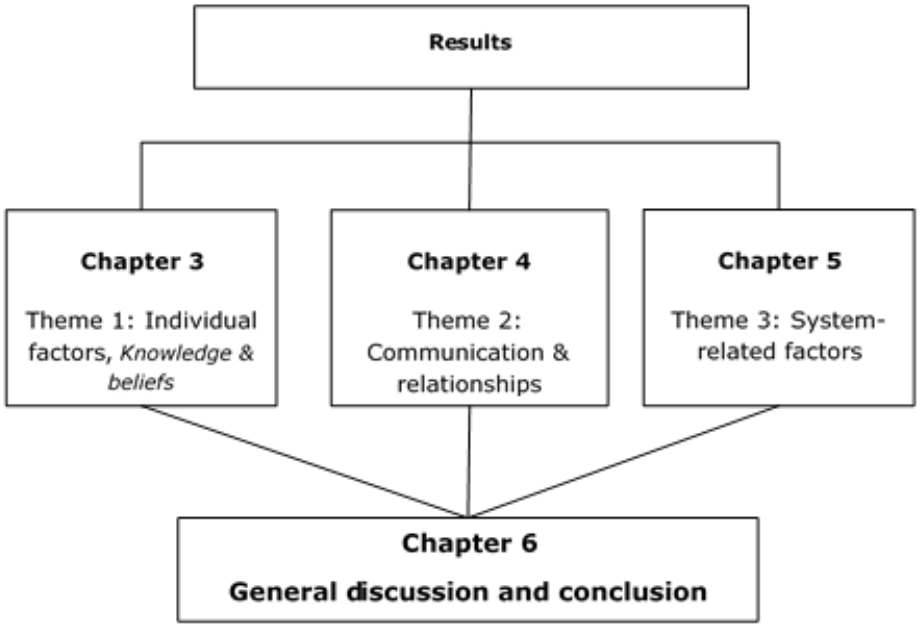


Figure 14: layout of the thesis chapters

Theme 1: Individual factors, Knowledge and beliefs

2 Introduction

The definition of self care is intended to have practical uses rather than be a matter of semantic or philosophical definition. (Webber et al. 2013) Therefore it was important to understand how the primary healthcare stakeholders in this study (public, physician and the pharmacy staff) define self care, and if the concept of self-medication is recognised as one of the domains in self care. In addition, understanding of the public definition of minor ailments, will help to give a better understanding of their attitude in handling their symptoms i.e. illness behaviour. This chapter illustrates the understanding and awareness of the studied context to the concept of self care. It is also discussing the recognition of self care and patient empowerment in the Omani primary healthcare system.

This chapter will also illuminate the experience of the public in the self-management of minor ailments. Knowledge and attitudes towards medicines were identified as major factors in the decision taking for managing minor ailments by the participants in this study. People identified the need for fast treatment, use of antibiotics and quality of medicines as three main factors determined their choice of health sector i.e. government or private. Public negative attitude to medicines or fear from side-effects influenced their attitudes in self-medication or appropriate use of prescribed medication e.g. taking a lower dose. Lack of knowledge or negative beliefs about the use of over the counter medicines and responsible self-medication had an influence on people's attitudes. The healthcare professional's points of view are also discussed in comparison to the public, to have a complete understanding of the concepts.

3 Results

3.1 Understanding of the general concept of self care

The public participants identified prevention as the main component of self care activities, when explaining their understanding of the term "self care". They defined self care as any activities an individual adopts to maintain a healthy lifestyle and prevent illnesses. The domain of activities that was commonly mentioned by the participants were referred to as a healthy lifestyle, which included: good hygiene, physical activity, healthy eating.

> *"Self care, first thing is taking care of my health 'health wise': physically, of which for example I maintain through exercises, by doing exercise, healthy food, and then hygiene wise, naturally the one has to have a bath on a daily basis, and maintain, how to say it? That if the surrounding environment to be clean so you don't get sick and so you will be less exposed to diseases. So, the first thing is to maintain hygiene and if he maintained it, this would reduce the exposure to dust and similar things. So I feel this is the most important thing."*
>
> ***Public 2, female, 24 years old***

Adherence and monitoring of treatment and adjusting lifestyle was identified as a domain in self care by a member of the public who was diagnosed with chronic conditions like diabetes mellitus or hypertension.

> *"By taking my medicines on time, visiting the health centre every three months for check-ups, and use the check-up devices I have at home if necessary, I don't use the device at home every day, some people use it every morning."*
>
> ***Public 15, female, 56 years old***

Few individuals from the public identified self-medication as part of self care. They perceived self care as keeping a home pharmacy with essential medicines for the initial management of any symptoms. For those group of public participants, self-medication was explicitly identified as part of self care.

> *"self care from my point of view is like a home pharmacy which includes pain killer and first aid medicines for any illness, I don't mean first aid like wound dressing only, but also painkillers and allergy medicines and the like, that is what I know."*
>
> ***Public 1, male, 28 years old***

Others who identified self-management of minor ailments as part of self care, had negative views toward the use of medicines, "self-medication," without doctor consultation. Although they explained that their self-medication activities were limited to the use of natural therapy i.e. home remedies, and sometimes paracetamol, it was perceived that most of the public participants indicated the use of medicines that they are familiar with for certain recurrent symptoms, without consulting the doctor.

> *"Self care means how to maintain, take care of myself. For instance, I got sick, what things I should do first, if I had a fever or flu or so, what sort of pain I feel and how to self-treat with available things to me, like natural medicines for example."*
>
> ***Public 2, female, 23 years old***

There were imprecise, inconsistent responses from most of the healthcare professionals when they were asked to define "self care". Some identified it as the practice of counselling and given instructions on medicines intake. Others identified it as "first-aid" the initial intervention that a patient should apply when getting injured or get an episode

of an attack in a chronic condition e.g. asthma, epilepsy or hypoglycemia. A GP working in the public health sector explained that:

> *"Self care is a vague term here in Oman, because we have patients who are very obsessive about their health, secondly the one who completely ignore it and the one in between, the one who is obsessive will come with very minor, minor ailments like flu or minor wound cut, we know you can treat it at home with home remedies, but even for that they'll come to the health centre, to seek medical attention, and the one who are completely ignoring it has serious illnesses and they'll not seek help unless it is too late, and when we see them it is pretty much late and then when we approach them they already in denial stage."*
>
> ***HC GP 19, male***

3.2 Understanding of minor ailments

Individual's perceptions and understanding of their symptoms were shown to have an influence on the decision taken on how to handle the symptoms. Therefore, poor and inaccurate understanding of the symptoms emerged in this study as one of the factors that determines the attitude of the community toward self-management of minor ailments.

Few of the participants, from both the public and healthcare professionals were able to define the characteristics of minor ailments i.e. self-limiting. Others explicitly used a different terminology to define minor ailments e.g. seasonal, simple, normal patient, etc. Most of the interviewed participants tended to give a description of symptoms characteristics to distinguish a condition as being minor or serious, such as; fever, duration, severity or frequency, and the age of the individual.

3.2.1 Fever

The public participants were fearful of fever as a symptom, they identified that the conditions are considered to be minor if the symptoms were not associated with fever, for example in common cold.

> *"I do not think fever is a minor ailment. If there is the cold or a sore throat alone, or a headache, this is a minor ailment, you do not have to go to the physician."*
>
> ***Public 7, male, 22 years old***

> *"Cold usually last for three days, I see a doctor after four or five days if no improvement. You know, cold is alleviated gradually. But, if I also had a fever, I go directly, because it might be an inflammation or so. A cold with fever is an indication of the underlying cause, but a cold without fever is not something to worry about."*
>
> ***Public 12, female, 45 years old***

3.2.2 Duration

Most of the participants from both the public and healthcare professionals identified that minor ailments should have a short duration that does not go beyond three days. Although few indicated that it is normal for the cold to last for a week, they highlighted that this is not the case if it is associated with fever; they felt that an individual should consult the doctor if a fever lasted for more than two days.

> *"Unless it goes over three days then that's will start to come to a concern, anything beyond three days I think it is going to come to concern."*
>
> ***Public 14, female, 34 years old***

> *"I am telling them: this medicine you take for 2 days if fever continuous go checks with the doctor. If an adult has tonsillitis, fever and everything: take medicine for 2 days and if there is no improvement check with the doctor."*
>
> ***Community Ph. 3, female***

Some public participants indicated they would consult the doctor on the same day if the fever has not improved in hours.

> *"If the temperature did not drop within four to five hours, we have to go to the hospital."*
>
> ***Public 18, male, 62 years old***

3.2.3 Severity and frequency

The type and severity of symptoms determined the classification of minor ailments by some of the interviewed participants. Public participants tended to give more attention to symptoms that disturbed everyday routines or activities. However, some were not concerned about the seriousness of their condition as long it did not disturb their life routine, e.g. hypothyroidism, as explained by one of the public's participants. Some male participants commonly identified sore throat and body aches as symptoms that could not be tolerated and required doctor consultation.

> *"If I have a fever now, I don't wait, I should go to the physician. If my temperature rises, I suffer from fever in the bones and it really troubles me… I should get an injection."*
>
> ***Public 5, male, 47 years old***

> *"When I get cold I go immediately to the doctor because my throat was very painful and was not able to swallow as normal, so he gave me anti-allergic "antihistamines" and cough medicines. One of the incident I left it for too long, that I had a growth since 1994, it is very small growth and I ignored it, when I press on it was painful but did not need to see the doctor,…,but then later the problem happened, I am using my hand a lot in my work so I ended with the need to do something about it,…, it was growing continuously on the last 20 years so this alert me of the need of removing it and show it to the doctor,…,it was not bothering me to that extent but when it did I went."*
>
> ***Public 10, male, 45 years old***

In general, people are cautious about gastric conditions when they are associated with severe pain and discomfort which lead them to consult the physician immediately, or the emergency department if it is during out-of-hours. Few of the participants showed a better understanding of the frequency of gastrointestinal symptoms and the requirement for doctor consultation.

> *"Vomiting is a minor ailment if it is less than four times, if it is more than four times, it is a problem."*
>
> ***Public 6, male, 31 years old***

3.3 Attitude to self care of minor ailments

3.3.1 Socio-culture-related factors

Societal and cultural beliefs were identified as having an influence on the people's responses to fever. Some physicians explained that fever was usually treated with caution and close monitoring in the past because of the high prevalence of malaria in the country.

"I am here in Oman for the past 25 years, I reached here in 1990, I have been seen how the healthcare and health system has been growing in Oman, In the government sector as well as in the private sector, even the changes in the diseases that has been happening, …, malaria was the main problem that was going on, and every case of fever, high fever, was treated as a case of malaria, and within the first 5 years, you know, it was a tremendous success, malaria was completely eradicated from Oman, so the way the ministry invited all the private sectors to their discussion and how we were taught by the government sector, to handle every case as a serious case and looking into it, that was the only possible way of eradicating malaria, so like that after the first 5-6 years, after me coming to Oman, we started getting information from the ministry like malaria almost eradicated, the number of cases has come down drastically, so that was the major thing was happening."

Private GP 30, female

Another physician also identified the cultural influence of relatives or friends sharing stories that could be not clearly or accurately explained and therefore lead to unnecessary fear or concerns about any condition associated with fever.

"Some of the patients also maybe because of the community or they heard from somebody that person A, got fever and the next day he died, and they are not asking what type of fever, or person B he got fever and then they discovered is having so and so serious problem, we know in the medical field that the fever is a symptoms which can presents with a lot of diseases serious and benign, but the tendency of the human being is to remember the serious things and deny the benign things, that's why they are correlating the fever with serious diseases than benign, although the benign is most common."

HC GP10, female

Some public participants were aware of the effectiveness of the use of OTC preparations for the management of symptoms associated with the common cold. However, they showed a preference to visit the doctor to obtain a "fast relief" treatment. They explained that, it is important for fast recovery to be able to accomplish life commitments e.g. study, work.

> *"If I have a strong fever, in this case I prefer to go to another clinic if the first physician does not give me treatment especially if it is an exam period because I need to get well fast to study."*
>
> ***Public 08, male, 23 years old***

People's attitude to handling their minor illness or symptoms are highly influenced by the knowledge and understanding they gained from previous experience with the condition. This was also influenced by the advice and intervention they receive from the healthcare professionals they are consulting. Most of the public participants indicated that no healthcare professionals advised them on self care or use of home remedy alone without providing a prescription of medicines. Therefore, this lead them to believe that self care alone is not sufficient for the management of minor ailments, especially when antibiotics or injections are prescribed for the common cold.

Effective and appropriate self care requires the individual to have the sufficient knowledge to determine the appropriateness of self-management of the condition, and identify alarm symptoms that require consultation with a doctor or medical intervention. Public participants were found to be highly dependent on doctors for the management of minor illness, believing that a complete cure will not be achieved without consulting a doctor.

"Self care is a solution if the person is confident that it is a minor condition that is recurrent due to weather change and cold weather but if it is a virus it is difficult, must need to see the doctor."

Public 3, female, 40 years old

Although some of the public participants were informed about the management of fever in children, they tended not to apply the advice given before considering seeing a doctor. They tried to justify the appropriateness of their visit by avoiding treating the symptoms before visiting the doctor.

"If my child is sick and having a fever, I take him to the doctor and make sure not to give bath beforehand because bathing will reduce the temperature, and the doctor will say that he has no fever. If I take the child without bathing, he is hot, and they will apply cold packs. But sometimes, I don't want to wait in the hospital, so I just treat them at home."

Public 13, female, 44 years old

*"**Researcher**: so do you think they are rushing?*

Yes they are rushing, and sometimes they don't give the children Amol® (INN: Paracetamol, Oman) for the fever, they wait to come here to be checked, the temperature, which is very risky for the child, because they are telling: if we give, the temperature will go down, so you'll not believe us about the fever. We are telling them: we believe you; and it is risky for the patient not to give. I feel the education is very important.

***Researcher**: What they expect when they come to you, in case they tried something at home, are they expecting another treatment, or assurance or what?*

Most of the time they want assurance, and another medication,

***Researcher**: Different to what they used?*

Yes, for example a stronger medicine, sometimes they want antibiotics."

HC GP 13, female

3.4 Attitude to medicines

3.4.1 Negative attitude to medicines

Most of the public participant showed a fear about medicines citing they are made of chemical components, which can harm the body if unnecessarily used for minor ailments. They expressed a preference for taking a lower dose, a single dose, or shortening treatment duration if used to reduce the risk of side effects like ulcer, kidney damage or sedimentation of the drug in the body.

> *"All medicines are chemical, I'm a big believer of that, and I feel like it is if tomorrow you got something worse and you get yourself used to this so it will not work; Even if it's something simple. I feel better to use them when you really in need."*
>
> ***Public14, female 34 years old***

A physician explained that people take a lower dose of the medicines because they believe this could reduce the risk of side effects.

> *"I have been five years in Oman and I just saw one case of overdose,…, most of them take under dose because they believe that if you take lower dose you can reduce the side effects."*
>
> ***Private GP 28, male***

One of the pharmacy staff reflected that people having a negative attitude toward medicines is a barrier for the people to have confidence for self-management.

> *"No, they cannot, based on their knowledge they can't…most of the patients when we are giving them the medications they are asking almost the same questions: Is this going to hurt me?,…, it is weird really, even my aunt, she is a consultant, she said the same, I am prescribing them medications and they ask the same: Is this going to hurt me?; why?! I am prescribing you a medication to solve your problem."*
>
> ***HC ph. 07, male***

This misconception about the side effect of the medicines and fear of medicines could negatively affect adherence to medicines taking. The public were generalising the concept without being able to differentiate the different aspect of side-effects and what can be acceptable and manageable, and what could be harmful and requires medical consultation. Therefore, it was important to understand what caused this general fear of medicines. During the second phase of the study, these attitudes and beliefs were investigated to understand if there were factors or types of intervention causing this negative attitude. Different factors were identified by the healthcare professionals that could lead to the public be more aware of medicines' side effects, which includes: educational level, national campaigns and public awareness, e.g. a campaign on the rational use of medicines. They assumed that these two factors made people to read the medicines information and to ask for more details on side effects.

> *"Maybe because health education is better than before, also there is a programme by the ministry to help e.g. national screening programme for 40 years and above, discovered few cases of chronic diseases before the use of NSAIDs, so spread of this information helps people and health workers to open their eyes in using this NSAIDs, some of the medications that OTC, the people started to feel that it has side effects."*
>
> ***HC GP 10, female***

"To be honest, (person name) did a huge effort; and the people now are not like the people 20 years ago, before they just take what is dispensed for them, but the people now are reading the leafle, and when I dispense the medicines they say: please can you give me the leaflet. They started to read."

HC Assistant Ph. 12, female

This negative attitude to medicines influenced the public's approach in handling their minor ailments. People, who showed a preference to avoid medicines as much as possible in case of their minor ailments, indicated their use of home remedies to handle their symptoms. Some indicated that the community pharmacies do not advise them on the benefit and risks, and they are usually selling a medicine without providing adequate counselling to assure the safety of the medicines. Subsequently, they believe that it is safer to consult the physician to make sure he prescribes the right or appropriate medicines.

"I cannot trust the pharmacist, he may issue a medicine without explaining the benefits and side effects. It is better to get a medicine under the doctor's supervision; the doctor tells me more about the medicine. Also, the pharmacist might not be aware of my case and issue any medicines, I don't go to the pharmacy to buy medicines just like that."

Public 16, female, 19 years old

3.4.2 Rapid effect and strong medicines

Some public participants showed a preference for a treatment that gives them fast and immediate relief from their symptoms. Those who wanted quick treatment reported preferring to go to the private sector to get an injection or medicines that they described as "strong and fast acting". They explained that the private sector provides medications, which are stronger than government sector, and therefore they prefer to go to the private sector.

> *"I have been to the health centre several times, and they just give me Panadol®. But in the clinic, they give me I.V. and I feel much better as it is quick and has fast effect."*
>
> ***Public 16, female, 19 years old***

The public participants indicated the medicine to be strong if it has a fast effect in improving the conditions; like injection, or antibiotic other indicated the strong medicine by its shape and price, which was referred as better quality. Although people understand that it is not essential to take fast effecting treatment for minor ailments, some of them showed a preference toward quick relief intervention when they have life commitments; for example, busy weekend or during exams.

> *"When I have exams and at these periods, I should treat myself fast. This means that after one or two days I take medicine or consult the physician, I sometimes ask him for a strong type so that it can have a fast effect."*
>
> ***Public 08, male, 23 years old***

When it comes to the management of common conditions in children, parents showed concern with regard to the risk of using strong medicines for their children and therefore they explained that they try to reduce the intake of prescribed medicines or avoid taking them to the private sector to protect their child from getting a strong medication.

"You know although the medicines prescribed by the clinic are strong but I feel they are fast and useful, sometimes I feel it is strong and not suitable for the children; the hospital understand more about what suitable for them but it has slow effect."

Public 03, female, 40 years old

"I usually go to private clinics, because health centres are crowded. This is the truth. Therefore, I like clinics but I take the children to the health centre, because the health centre prescribes the right medicine for children. The private hospitals may prescribe strong medicine to get more money, as for children, I believe health centres are better."

Public 05, male, 47 years old

"I have a young daughter, when I notice that she has a cold, I give her Omvil® (INN: chlorpheniramine maleate, Oman) once at night for three days, they instructed for two times a day but I prefer once at night and it helps to ease the congestion. Sometimes, the cold persists for five days, and I avoid giving her antibiotics immediately because the clinics directly prescribe antibiotics, unlike the health centres. That's why I prefer health centres for young children."

Public 12, female, 45 years old

However, some parents said that their views for taking the children to the private sector have changed after gaining a sufficient knowledge and experience about the condition and the medication.

"Previously, you can imagine that we had a bad idea about {private polyclinic A}, I had the idea that those physicians give children strong medicines. You can imagine that I had health insurance but I go to other clinics I know. I did not go to {private polyclinic A} or the clinics covered by the insurance; I paid from my pocket. This was because I thought that these clinics gave strong medications to children. This was my fear especially with the first child as I told you. However, I tried them and found that the words of people were unreal and that the physicians there were good.

Researcher: *Do you think their medicines are strong?*

Never. I did not know in the first place before I had a child. You even do not know the Panadol® before you have children. You may see it but do not know what it is for. Shortly after the first child, I started to go to these private clinics covered by the insurance, thank-God, their medicines were excellent. You know what I sometimes do, it is your first child and one is keen to protect him, I take the medicines from {private polyclinic A} and then I go to a second physician.

Researcher: *Why?*

I ask about his opinion on the medicine. If he says it is ok, we take it. From that time when I found that it was ok and the prescription was right, I moved to it after for treatment."

Public 6, male, 31 years old

The public perceptions about the effectiveness of medicine are greatly influenced by the source, impacting the decision on the choice of health sector when seeking medical advice for their symptoms. Some people who wanted quick treatment reported preferring to go to the private sector to get an injection or medicines that they described as "strong and fast acting". Injections are dispensed in great quantities by the private sector; therefore, people believe that private medicines are going to work faster and better than free governmental medicines. A member of the public explained that once he became aware of

the active ingredient of the injection, he showed a preference to self-medicate with a different dosage form of the same medicine to provide similar fast effect.

> *"I used to have the pain killers Advil®, Brufen® or Panadol®, and before I used to have -when I go to the hospital- if they give me an injection I ask them about it,…,It is Voltaren® an analgesic for fever, or tonsillitis. Since I always had been given voltaren®, I didn't go to the hospital any more. I have volatren® as effervescent tablets so I prepare it and drink and that is it, just a difference in the route."*
>
> ***Public 1, male, 28 years old***

3.4.3 Medicine quality

Some people expressed negative beliefs about the quality of medicines, which caused them to believe that free medicines provided by the MoH are of lower quality than of other sectors. People identified the quality as to have better or stronger effect, higher cost and it is not locally or Asian manufactured.

> *"The government health centre gives you medicines with a lower effect. A private clinic, they give you the same medicines but I say: no, I need stronger. so, they give you but it may be more expensive. But I don't know why the government gives medicines with lower effect."*
>
> ***Public 07, male, 22 years old***

> *"I see the types and I know now, I have experience, they give you the simple and cheap types. This is to the contrary of the clinics, they aim at usefulness and give you the good types. There is no comparison, this may relate to budgets and the like, I cannot tell. You do not know what the reason is for that. Sometimes, you ask them for a good medicine. I did not try that but some people asked for better medicines and the physician write them an external prescription, the reason is that they do not have it!"*
>
> ***Public 06, male, 31 years old***

Few people showed a good awareness of branded-generic medicines and explained that they don't have a problem with using any brands of the medicines. However, some of them explained that they have a preference of some brands because of the dosage form and taste.

> *"Ok, for these names, the brands' names I don't think it is an issue as the content of the medicine is same, it is just a different company."*
>
> ***Public 02, female, 24 years old***

> *"It does not make any difference to me. However, my children don't like Omol® (INN: paracetamol 500 mg, Oman) tablet because its size is big. They prefer Panadol because its oval shape makes it easier to swallow."*
>
> ***Public 15, female, 56 years old***

A public-health-sector GP explained that, people and healthcare professionals' perception toward the quality of the public free medicines it is not always related to the generic-branded use of medications, she explained that the private sector sometimes gives a misleading information to indicate that the quality of the public health sector medicines is poor quality.

"People are talking about the quality of medicines in government, but sometimes the private also for example Lisinopril, cough is well known complain, side effect if you take Lisinopril, when you go to the private, he'll stop the medication and start valsartan which is supposed to be this is the process, but what he'll tell him! he will tell him: this medicine which you have been given in the primary care is a bad quality" not because it is well-known side effect of the medication."

HC GP 10, female

In the private sector, community pharmacy staff indicated a different attitude of the public toward purchasing of the generic vs. branded medicines, explaining that not all the customers are requesting for branded medicines, some prefer the local brands. They also stated that some have more trust on the prescribed choice of the physician and will not accept an alternative. Some community pharmacists explained that some customers would accept their recommendation on alternative brand but it depends on how good are you on convincing the customers.

"Some people when a doctor prescribes for them a medicine and I dispense the available trade of that medicine, he'll ask, "Is it the same medicine?" "Yes", so he'll accept it but some they may not and say "if this is what doctor prescribed I will follow his, I'll see another place until you offer it again."

Community ph.25, male

"We will try to explain, the content and the power (dose) will show, the only thing it is only made is different. Sometime some will say it is ok and they will compromise. Some will say: the doctor wrote that one so better you give that one."

Community ph. 02, male

> *"Omol® (INN: paracetamol, Oman) is effective, some customers they are really like Omol®. See like in syrup because of the taste people shifts to Panadol®, but does not mean Omol® is bad, Omol® is not working, no. But because of personal expectation, they are switching to Panadol®. When patient come with a prescription of antibiotics, and that the same brand I don't have, I need to ask him if I want to switch to different brand, then he will ask which company from where, Germany, Jordanian, UAE or Saudi then I am telling him no this is good then he is accepting, it depends on how I am convincing."*
>
> ***Community Assistant Ph. 09, male***

A community pharmacist indicated the there is no "a stronger" alternative with regards to over the counter preparations for minor ailments and they usually tend to respond to the customer demand for stronger medication by either selecting a different brand or more costly medicine of the same ingredient to gain the customer satisfaction.

> *"They will ask: I got more pain, so give me a strong one. we used to give one medicine and telling them: see this is very good. it is all a placebo effect only, it will work we know that same medicines but with that confidence you are giving only. Sometimes it will work and sometimes those elderly will say: no that is not good. So, in this case, I need to go for a good brand e.g. Novartis® or Olfen® capsule (INN: diclofenac, Switzerland). If it will be really effective than he will be happy."*
>
> ***Community Ph.2, male***

A private physician intended to select different brands of medicines to make the patient satisfied; she stated that she usually try to advise the people on the quality of the medicines obtained from the government. However, she explained that it is important to gain the patient's satisfaction in the private sector by describing different brands of medicines that make them belief they are getting better medication than from other doctors.

"Individuals are different, I would say what does the ministry do is correct, why should have different brands of medicines, no need but for the satisfaction of the patient the private sector will be better. People who go to the ministry hospital always complain: whenever we go, it is only these tablets they are giving, it is just this Adol® (INN: paracetamol, UAE) they are giving 3 Adol® tablets, the action of the medicine is just the same, what the ministry does is correct, but people they have what a psychological feeling that we are giving them more medicines, or something different other than the stereotyped medicines they see. Actually, that is enough; but in the private when they come, we are exposed to many different brands, even Adol®, it comes as Panadol®, Panadol Extra®, so people get the feeling, yah we can get something different, it is not repetition of the same. It is a psychological effect, we will be giving the same medicines, with a different name with a different colour, and the patient feels like ah, ok I am taking a different medicine and then it works, it is* psychological. We have a pharmacy and we have so many different brands, so definitely they will be getting different, different medicines, change of the brands, molecule is the same, but it is a psychological effect for the patient."

Private GP 30, female

Some of the healthcare professionals that are mainly working in the public health sector showed to be not convinced with the generic-brand switching, indicating that it is of lower quality. Because the choice of brands of the same medication is limited to one option in the public health sector, some doctors try to provide evidence to change the available generics to better alternative. Some pharmacy staff explained that reporting ADR or other drug related problems could make the Ministry of Health consider changing the generics provided, so they encourage the patient to report any side effects or related medicine issues. Others try to convince the patient that it is better than the previous medicines.

* *Three Adol® tablets: it means the frequency and not number of the tablets i.e. 1-2 tablets, three times daily.*

However, some stated that they advise the patient to purchase it out-of-pocket from outside i.e. private community pharmacy.

> *"Now there is more awareness about generic within the community, not like before, when replacing the branded with generics were initiated. Before there were too much complains about supplying cheap medicines and so. But now there is awareness that they may be the same. Some will ask for Omani produced medicines especially the normal one e.g. Adol®[†] and so, they found it effective. But generics can vary and the problem of generics is still there, even we do not trust it 100% but we have to promote for.*
>
> ***Researcher:*** *Why do you not trust generics?*
>
> *I don't know, I don't believe in generics 100%. We usually tell the doctor if you can prove that they are not working and do the tests pre and post so we can change it. It happened once by prescribing two different brands one from the centre and one from outside and we monitor their blood pressure and compare it and then we changed the brand supplied by health centre. You can't change because just people don't like it, once Diovan® when it changed to generic people were complaining but it was effective and now people are using it. When they are used to a brand they will say: what is this strange company! but currently they are taking it."*
>
> ***HC Ph.04, female***

[†] *Adol® is not an Omani manufactured product, the participant here meant Paracetamol. Adol® is a well-known brand and people usually use the name Adol® when referring to any paracetamol product.*

"Sometimes I advise them to buy this medication like metformin, our metformin in the primary care is an Omani brand, generic and sometimes they are complaining it is not working or there are some side effects, especially you know metformin cause gastric upset, so I am advising them to buy from brand one because it is cheap, more effective and less side effects, it is Glucophage®, and I tried it myself actually.

Researcher: *Are they happy to buy it?*

Yes they are happy, because you know I explain to them 100 tablets, because I know, 100 tablets are only three Omani Riyals from {Pharmacy Name A}, and it is American company."

HC Ph.07, male

3.4.4 Antibiotics for common cold

The "need of antibiotics" to treat common cold symptoms was one of the factors identified in the study that influenced the management of minor ailments. Some public participants indicated that it was necessary to take antibiotics for conditions associated with fever or sore throats. They believed that fever is a sign of an underlying inflammation that requires antibiotics.

"I do not go to the hospital if I have cold. I go to the hospital if there is inflammation. If it is only cold, I can control it but if it is cold plus fever, this means you have inflammation. I know that from my readings about the symptoms. If you have fever, you have inflammation, such as that in the throat; fever means antibiotic."

Public 6, male, 31 years old

The attitude of the physicians toward prescribing antibiotics for acute respiratory infection influenced people's perception in the management of minor ailments; some members of the public indicated that doctors advise them of the need of antibiotics for a sore throat.

> *"At the clinic, they give me an antibiotic, they tell me that the antibiotic is the best solution for the sore throat, they ask me to take it at regular time and the illness shall end."*
>
> ***Public 7, male, 22 years old***

This knowledge people have of the need for antibiotics for any symptoms associated with fever could cause them to demand the desired treatment from the GP; as one of the physicians explained:

> *"Sometimes patients say: I have throat infection, I have infection so give me antibiotics, I have fever, sore throat and cough and I know my cough and throat pain will not go, only with antibiotics. but there is no infection: I examined you. Some patient they are insisting for antibiotics."*
>
> ***HC GP 11, female***

The study participants indicated that it is easier to get the desired treatment from a private doctor. Whereas it may take many visits to get antibiotic from the public health centre. Therefore, Patients who are demanding antibiotics prefers to go to the private sector to get the desired treatment, even if they are had to pay out-of-pockets.

> *"They {Health centres} are subject to many laws. At the start, it is impossible to give you strong medicine. The physician tells you go and see for three days. You have to go back for the second time. This is the same case if you have a chest condition, they tell you to go and see. They have steps and system to follow."*
>
> **Public 6, male, 31 *years old***

> *"A parent comes: I came to give me antibiotic for my son, and if you don't give him, he'll say: you know nothing, and you don't know how to treat well. so, you explain for him that it is viral, we give antibiotics if for bacterial infection, he insists: no, no, every time he got sick they give him antibiotic and he improves, we went to a private clinic and they prescribed it for him."*
>
> ***HC GP15, male***

Although some people were aware of the risk of unnecessary use of antibiotics for the common cold, they identified the irrational use of antibiotic as a sort of self-harm rather than have impact on the community i.e. emergence of antibiotic resistance. Some public participants explained that the use of antibiotics could affect their immunity and that they will be ineffective when really needed if overused when not required.

> *"when I needed to use "antibiotic" for my condition, he (the doctor) told me to use the natural immunity of your body instead of relying on the antibiotic, because it could reduce your immunity, you get this advice from doctors that know you will, that what they suggest."*
>
> ***Public 10, male, 45 years old***

> *"What they give you is antibiotics and I am big believer these things could affect your immunity, …, All medicines are chemical I am a big believer of that and I feel like it is if tomorrow you got something worse and you get your self-used to this so it will not work, even if it is something simple. I feel better to use them when you really in need."*
>
> **Public 14, female, 34 years old**

However, not all people who utilise the private health sector support the doctors' practice of prescribing antibiotics. Some public participants expressed their dissatisfaction of doctors overprescribing medicines such as antibiotics for minor ailments. This raised the

concern of unnecessary prescribing of antibiotics and poor adherence to the prescribed course of antibiotic.

> *"He (the doctor) writes the medicine but I don't have to take it, so I don't dispense it or take it.*
>
> ***Researcher:*** *so, what do will you do will you will continue on home remedies?*
>
> *No for example if antibiotic I might, to be honest, I follow the doctor I follow what the doctor says but if I take I will not take it for longer I see myself I got better and stop even if he tells me to take it for five days."*
>
> ***Public 14, female, 34 years old***

> *"Because private hospitals and clinics prescribe lots of medicines, either you need them or not, especially antibiotics, I do tell them that the condition does not require antibiotics. I know when antibiotics are needed. They tell me: it is ok, you buy it and keep it with you. That's why I don't go to private hospitals or clinics."*
>
> **Public 15, female, 56 years old**

Most of the community pharmacists working in Oman are coming from different setting whereas the prescribing of antibiotic is not strictly regulated, which led them to explain that their clinical roles are very limited with regard to the management of minor ailments in the pharmacy. However, few of them believed that it is good to have a strict regulation in the country.

> *"We need permission to dispense more medicines because some people are coming with swelling tonsillitis and very high fever. This without asking he needs antibiotic so what is wrong with that?! Why I cannot give?! Without even the doctor investigates him, definitely, he will write, so what I am doing here just dispense what doctor say."*
>
> **Community Ph.03, female**

"What we are following there is different than here. It is dispensing pattern there, for example, no restriction on antibiotics or anti-depressant; we can give it with or without prescription, if the patient is asking I was continuing on this therapy, we use to give and very limited control is there on drugs, here it is good in Oman, more restrictions."

Community Ph.24, female

However, one of the public participants indicated that he could obtain antibiotics from the community pharmacy during out-of-the-hours; he explained that community pharmacist could sell you an antibiotic in case you showed that you had used it before.

"There in {Interior city name} (outside the Governorate of Muscat), the pharmacist does not give (antibiotic) unless you brought him a piece of the carton and told him that you used to take it, a sample for example, then it is fine he gives you.

Researcher: *like what?*

An antibiotic in a green and white carton that I do not remember its name.

Researcher: *but if you bring him a carton of an antibiotic, does he give you?*

Yes.

Researcher: *He does not ask you to see the physician and bring a prescription?*

No. Hi gives you because he knows that you had it but it finished and you need another one. But he asks me for who and how old the person is. If I tell him that the patient has another illness, he says that it is better for him to see the physician on the next day.

Researcher: *when do you ask for an antibiotic?*

If I have fever in the evening and the hospital is far. I drink it and wait until morning. If I am not fine, I go to a health centre or a private clinic if he gives me the same one I bought in the evening, I'll tell him that I bought it yesterday, and he would tell me to continue taking it."

Public 7, male, 22 years old

3.4.5 Views toward over the counter medicines and self-medication

Participants understanding of the use of available over-the-counter medicines in the management of minor ailments are lacking. The public participants believed that, medicines are available as general sale list are safe to use e.g. paracetamol. However most of them were not confident to use other over-the counter preparations, which they were not familiar with for minor ailments, without consulting the doctor first. People viewed that the doctors are not prescribing cold and flu-combined preparations, indicated that they are not a suitable treatment.

> *"I don't know if what I am going to say is right or not, but people in general feels that Panadol® in general is safe and it doesn't have any side effects, I do have this belief but I don't know if it is right or wrong.*
>
> ***Researcher:** It is safe within recommended dose.*
>
> *Yes, and what made me feels like this is that you'll find it everywhere."*
>
> ***Public 9, male, 37 years old***

Some older public-participants who used to manage their condition in the public health sectors and have a negative attitude to private sector believes that because many of the preparations for common cold and flu are not available in the public health sector, it means that they are not appropriate for treating the symptoms.

> *"**Researcher:** Does she (your wife) use the medicines from the pharmacy, like Panadol Cold & Flu?*
>
> *Yes, she bought tem several times, but I don't use them.*
>
> ***Researcher:** Why? Don't you think they are better than the regular Panadol?*
>
> *No, if they were better than they will be available in the hospitals. These are temporary painkillers."*
>
> ***Public 18, male, 62 years old***

This belief was also indicated by some of the community pharmacists. They identified OTC medicines as a "first aid" intervention, that they are going to advice the patient to use to control the symptoms until the patient see the doctor. Some said taking OTC medicine alone is not a complete management.

> *"Yah, this is our job you know, yes but we can't treat the disease actually, we can give the initial therapy, we can give symptomatic therapy, in minor states we can give like first aid treatment we can give, some OTCs brand, not all, I mean OTC brands that covered in the list,…, only some medicines we can give in the OTC, not all the medicines, because there are many antihistamines drugs so we can't give them all, for example chlorpheniramine that is the very common medicine, this is available in the government sector like Zeet®, (INN: Bromhexine Hydrochloride 8 mg & Phenylpropanolamine Hydrochloride 25 mg, India) this is the chlorpheniramine is a safe medication, that we know that is a safe medication and initially antihistamine can treat the cold, and some nasal congestion, like decongestant medicines, we can give like that, so at initial dose we can give, so that at least will reduce their symptoms until they reach to the doctor and doctor will start the complete treatment for them."*
>
> ***Community Assistant Ph.09, male***

Most people reported that they don't support seeking the pharmacist advice on self-medication without consulting the doctor first, however it was perceived that some of them buy medicines that has been previously prescribed by the doctor from the pharmacy for recurrent or long-term symptoms, and some were for prescription only medicines.

4 Discussion

4.1 Understanding and attitudes toward self care

The public showed a good understanding of self care as a general concept of preventing and managing chronic conditions once diagnosed. Almost all of them identified self care as the individual's responsibility to follow a healthy lifestyle to prevent disease. Although few indicated the use of medicines in self-management of their symptoms to prevent its prognosis; some rejected the concept of using medicines without physician consultation. However, some emphasised that self-medication should not go beyond the use of natural remedies. People's decisions around self care and their self-medication behaviours can be related to their understanding and beliefs about symptoms and illnesses.

4.2 Cultural knowledge of illness

In this study the culture and meaning of the illness and their interpretation of the symptoms affected people's response to the illness. Conrad and Barker (2010) discussed that the cultural meaning of an illness or condition causes people to respond differently than what it is normally accepted. Elliott et al. (2011) found that symptom characteristics were found to be strongly associated with the action taken by the individual compared to the demographic or socio-economic characteristics. People would be likely to consult the healthcare professionals if the symptoms interfered with life even if it is considered minor e.g. common cold or flu. However, it was not always a direct link that can be generalised; for example Elliott et al. (2012) in a further study explained that although severity was identified as the strongest driver of healthcare utilisation, there is a large number of people who will not go to a GP for their serious symptoms, which they were identified as high-impact non-consultation. On the other hand, unnecessary visits to the GP can happen for symptoms that are deemed as low-impact or minor. Fever can be a symptom

associated with common colds and flu, hence, medical consultations will not be required unless the patient's fever is associated with alarm symptoms or in the case of special cases, e.g. a child, adult with chronic conditions. For some groups of patients, fever was identified as their main concern. They do not consider fever as an associated symptom of conditions like cold and flu, and therefore they need to see the physician for the treatment of the perceived underlying cause i.e. inflammation.

4.2.1 Fever and malaria in Oman

Participants had a constant fear about any condition associated with fever, either gastrointestinal e.g. diarrhoea or vomiting, or respiratory e.g. cold or a sore throat. Fever was the main reason that raised the individual's concern toward the urgency of seeking medical consultation. People described typical symptoms of a common cold or flu, e.g., body ache, fatigue, fever and sore throat. However, they did not identify fever as typical symptoms that can be self-managed; some of the participants indicated that they have to seek a doctor's advice when they have fever associated with the common cold. People showed a lack of understanding about the pathophysiology and prevalence of the common cold and flu.

Socio-cultural factors are believed to have a major influence on the public attitude towards fever, which made them be more cautious in handling any fever-associated condition. Surprisingly, some doctors and pharmacy professionals were perceived to have similar concerns with regards to fever as an indication of an underlying condition. The national malaria eradication programme under the support of the MoH managed to categorise Oman as a free-malaria country by the end of the 1990s.(Snow et al. 2013) This highlighted the importance of educational interventions for all primary care stakeholders. Fever is believed to be a common response of the body's immunity to fight against a foreign condition. Some evidence indicates that a rise in body temperature to a certain level is a natural body healing response against foreign bodies i.e. post

vaccination, cold and flu.(Thompson 2005) People therefore should be educated about alarm symptoms that are associated with fever, for example, not responding to medication and fever triggered convulsion in children. A variation in people's knowledge and treatment of fever were highlighted in previous studies.(Purssell 2007, Purssell 2009, Kelly et al. 2016) In this study the lack of knowledge and health literacy that caused to unnecessary and illogical concern toward fever as associated symptoms with common acute condition e.g. vomiting, cold and flu is a significant finding. Understanding of the pathophysiology of these conditions and pharmacotherapy of the treatment should be urgently delivered to the public and healthcare professionals for reducing the irrational responding behaviour when treating these symptoms.

Furthermore, as the symptoms associated with malaria are described to be flu-like symptoms at the initial stages, it is can be distinguished if a full history is taken.(NICE CKS 2016) Lack of competence and continuing professional development could make pharmacy staff unconfident in giving advice on symptoms and therefore referring fever cases that lasted for two days to the doctor to avoid taking the risk. Previous experience and advice received, therefore, could influence people's attitudes in handling any symptoms associated with fever thinking they had to be managed by doctors. Consequence which leads the public to unnecessary visits to the doctor's clinic for self-limiting symptoms that can be self-managed in most of the cases.

4.2.2 Duration of a condition

The evidence shows that common cold conditions could last for two weeks, cough for three weeks and fever in common cold and flu up to five days.(Allan and Arroll 2014) The study indicated that the public participants lacked knowledge and understanding about the accepted duration of a condition indicating that they will consult the doctor after two or fewer days of persistent symptoms. Although some indicated that it is normal for

common cold symptoms to last for one- two weeks, they indicated that if fever is associated with their common illness, this triggers the urgency of seeing the doctor.

For safe and effective self care of symptoms, people should know when they need to consult a doctor for their symptoms. Duration and severity were identified as factors that may cause people to seek medical help. However, data from different countries shows that the duration of symptoms to be considered persistent varied, for example a cold is considered as persistent if lasted between four and seven days in the UK, and more than seven days in Canada.(Taylor 2011) The duration reported in this study was significantly lower; some participants identified that they would consult the doctor within 24-48 hours regardless if they have attempted to self-medicate or not. Although minor ailments are self-limiting conditions, the use of medicines for some conditions may require a few days or weeks. For some people if a dose of an indicated medicine does not help them to manage their symptoms will consider seeking medical help as the next step in their response to the symptoms. Lack of knowledge about the symptoms and efficacy of OTC medicines could lead to an inappropriate self care approach by the public and, consequently in some scenarios this can lead to irrational and unnecessary visits to the GP.

4.3 Knowledge and perceived attitude toward self care of minor ailments

People's previous experience influenced their knowledge and understanding about the minor illness. In this study, most of the public participants lacked the knowledge and understanding about their symptoms which lead to have less control over their health and therefore not practicing self care. Educating and supporting the individuals to apply some self care strategies may be sufficient to manage the condition and make a doctor

appointment for follow-up if necessary. Evidence shows that people sometimes tend not to try to self-manage their symptoms prior to accessing the health services for advice, for example, use of OTC medicines in self-management of pain.(Corbally and Gallagher 2006) Disagreement between the perceptions of patients and the doctors with regard to the severity of the symptoms or condition, was identified as one of the factors that limits patients from using the OTC medicines for self-management before visiting the doctor.(Corbally and Gallagher 2006) This behaviour was also shown in this study by both the public and healthcare professional. The public indicated that this would help to obtain the healthcare professionals attention and receive the care they anticipated for. They indicated that this would help the healthcare professionals to believe them; which could also be driven by the public attitude to rationalise the utilisation of the health services. This issue is related to the patient and healthcare professional relationship and patient empowerment which will be presented and discussed in detail in the next chapter (see chapter 4).

4.4 Attitude to medicines

The findings illustrated the perception of public and healthcare professionals' attitude toward medicines that influenced the decision in the management of minor ailments.

4.4.1 Rapid affect and strong medicines

People showed a preference to get injectable medication for a fast and immediate relief of their conditions. Therefore, they consult the private sector when they prefer to get an injection for their symptoms e.g. a sore throat and fever. Studies showed that prescribing of injectable medication is a common practice in some of the Asian countries.(Janjua et al. 2006, Chowdhury et al. 2011, McLaws et al. 2014) The studies had a similar finding with regard to people's belief that injectable medication is more effective than oral

medication and therefore they demand an injection to gain an immediate relief from the symptoms. McLaws et al. (2014) also found that financial benefit was the reason of unnecessary prescribing of injection in the private sector.

4.4.2 Medicines quality

The quality of the medicines obtained from the healthcare sectors was one of the influential factors in the management of minor ailments. The participant assessed the quality of the medicines based on its physical characteristics and the expected outcomes of alleviating the symptoms (either immediately or in short duration); irrespective if it was a generic, brand or different group of medicine. This finding is similar to a study by Patel et al. (2009) which identified that participants assessed the quality of the medicine based on time and duration of effect. Because of the discrepancy in the practice of prescribing of medicines between the government and private sector, people indicated that quality of the medicines as a factor to select different route of healthcare services. The government primary healthcare is following a strategy of maintaining access of the public to the healthcare with lower cost, whereas the private sector is usually a business-oriented healthcare in which the health workers are expected to treat the patient in best possible way to have them satisfied and improve the business. Perceiving two different practices of care by different providers could raise a concern of trust by the consumers about the quality of care and medicines provided; people were found to question anything that is provided for free.(Lonnroth et al. 2001, Patel et al. 2009)

The study showed that the public mistrust of the quality of the public free medications was influenced by the healthcare professionals' attitudes when providing medicines advice. The three key factors related to this are: firstly, the public-sector healthcare professionals advising the patient to purchase medicines from outside pharmacy, that is not available in the centre, and indicating that it is of better quality. Secondly, the healthcare professionals of public sector,are also encouraging the patients to report any

side effects or problem with the generic medicines that are newly introduced as an indication to enforce the regulatory body to substitute it with alternative. Thirdly, the private sectors are intending to prescribe different brand of medicines to mislead the patient that are getting different medicines than of the government and as a result better care. A review of literature showed that patient's trust on their physician often overrules their personal mistrust of generic medicines.(Hassali et al. 2009, Dunne and Dunne 2015, Yousefi et al. 2015) consequently, physicians who have a negative or prejudice attitude toward generics, could have an influence on the patients and their attitude to accept or refuse to use a generic medicine. (Dunne and Dunne 2015) Therefore it is important that the opinion of the physicians and pharmacists toward generic medicines is revised and improved.

The perceptions and use of generics by stakeholders have been studied intensively over the past few decades. However, no studies were found in Oman and limited studies were done in the neighbouring Gulf countries; which indicate that there are a limited knowledge and acceptance toward the use of generics by stakeholders.(Alghasham 2009, Al Ameri et al. 2013, Awaisu et al. 2014, Albadr and Khan 2015, Salhia et al. 2015) Interventional strategies to improve the use of generics were reviewed in the literature, e.g. education, financial incentives, advertising to promote generic medicines, free generic medicine trials, and monitoring regulation.(Kaplan et al. 2012, Babar et al. 2014) However it is important to highlight that not all the intervention can have a successful impact on the uptake of generics by the consumers. Educational intervention and better communication among the public and healthcare professionals were identified constantly in the literature to support the acceptance and use of generic medicines.(Babar et al. 2014, Dunne and Dunne 2015) The findings of this study, indicated the need of: (i) an awareness campaign targeting the stakeholders to change their perception toward the quality of the medicines in the public health sectors, (ii) a legislation and regulatory intervention to embrace the irrational variance of practice between the two sectors that caused the patient to question the quality of the free healthcare. (iii) Addressing the

issues related to the product attributes that negatively impact on the acceptance of generic medicines with the pharmaceutical companies e.g. taste, dosage form.

4.4.3 Antibiotics for common cold

Findings of this suggest significant misunderstanding in the need of antibiotics for treating colds. The study participants indicated that stronger medicines like antibiotic are required to relieve their symptom. The Arabic term used to indicate the need for antibiotics is "inflammation" not "infection". This may make people misinterpret the need for antibiotics for colds and sore throat, explaining that fever is a sign of inflammation that needs a course of antibiotic. A review of the international literature showed that 51% of the sample mistakenly thought that antibiotic are same as of anti-inflammatory agent and about 50% did not know that antimicrobial drugs are not useful for cold or flu.(Gualano et al. 2015) Public knowledge and use of antibiotics has been studied in some of the Gulf countries, including Oman. The overall findings indicate that people unnecessarily use antibiotics for common cold and flu, and they have a poor knowledge about the usefulness of antibiotics in these conditions.(Abasaeed et al. 2009, Jose et al. 2013, Belkina et al. 2014, Awad and Aboud 2015) Awad and Aboud (2015) found that more than half of their sample believed that using antibiotics can speed the recovery from coughs and cold.(2015)

Some of the public participants who showed no preference for taking antibiotics reported that antibiotics harm their immunity rather than causing bacterial resistance. Some indicated that there is no-harm of taking antibiotic once a year, whereas others tend to take lower dose or short duration than prescribed by their doctors. Lack of knowledge of the general population about the risk of inappropriate use of antibiotics and identifying it as a concern of self-harm rather than a community-harm, should be taken into consideration when addressing the antimicrobial resistance in the country. Review of literature that studied public antibiotic knowledge and attitude, indicated that about half

of the participants were aware about the concept of antimicrobial resistance, but 27% of them did not know that misuse of antibiotics could increase the risk of bacterial resistance.(Awad and Aboud 2015, Gualano et al. 2015) The study that assessed the Omani public knowledge and belief of antibiotic use did not look at the public knowledge about antibiotic resistance. (Jose et al. 2013) However, a similar study in Kuwait showed that about 49% of the sample were not aware that misuse of antibiotics could have an impact on bacterial resistance and 37% of them were uncertain.(Awad and Aboud 2015) In addition their study showed that more than half of the participants thought that individuals could be resistant to antibiotic. This could be related to the belief that the overuse of antibiotics could have an impact on individual self-harm rather than to the whole community, similar to our finding.

The lack of a standard national regulation and monitoring system on antibiotic prescribing by the physician, has made a substantial variation in the use of antibiotics for common colds among the two healthcare sectors. Although the government sector seems to have a regulation in place to control unnecessary prescribing of antibiotics for common cold, the situation in the private sector is not. The overprescribing of antibiotics by the private sector made the public question the quality of care provided by the government sector rather than understand the clinical evidence for the management of common cold. With the country joining the worldwide initiative in combating antimicrobial resistance (AMR), a national initiative to tackle AMR at different level was proposed in last May 2016.(Balkhy et al. 2016, MoH Oman 2016a) Identifying the important factors related to misuse of antibiotic in the primary healthcare setting will help to inform suitable interventions.

The finding of this study showed that the use of antibiotics for minor ailments were perceived to be influenced by the doctors prescribing rather than accessing antibiotic without medical consultation, it is important to enhance the governance regulation and monitoring of the prescribing of antibiotic in the private sector. Jose et al. (2013) found that 84% of the Omani participants don’t take antibiotic from the pharmacy without

doctor prescription. Attitude to use of antibiotics without doctor prescription is low in Oman compared to other Arab countries which ranged between 32% in Saudi Arabia and Kuwait to 36.6% in UAE.(Abasaeed et al. 2009, Belkina et al. 2014, Awad and Aboud 2015).

5 Conclusions

The findings support that people in general have a good understanding of the concept of self care in relation to prevention of illness and management of illness once diagnosed by the healthcare professionals. However, there was a variation in the decisions taken by the individuals when self-managing symptoms of minor ailments. This was more related to the understanding of the meaning of the symptoms and health knowledge. Most of the people who seek care for their minor ailments were influenced by their poor understanding of the symptoms of minor ailments and the cultural context of accessing medical advice and treatment only through the doctor. Awareness about self care and use of OTC medicines for treating minor ailments need to be initiated among Omani society to reduce the number of unnecessary visits to healthcare.

Furthermore, the findings identified a lack of knowledge that leads to irrational decision in the management of minor ailments. An educational and awareness programme is required that address the use of over the counter medication in the self-management of minor ailments. The public needs access to reliable information with regards to the correct using of medicines i.e. accurate dose and duration, and for better understanding of the side effects. This educational programme should also target both the healthcare professionals and the public on the appropriate use of antibiotics. These findings also suggest that there is a need to review the terminology used in health education in Oman; e.g. “inflammation” rather than “infection” or “immunity” rather than “resistance”

Chapter 4 Theme 2: Communication and relationships

1 Introduction

This chapter explores the attitude of both the public and GPs to the pharmacy profession and their perceptions toward accessing the community pharmacist for advice on minor ailments. It also explains the effect of patient-physicians-relationship and communication in self care and patient empowerment. Inter-professional relationships and collaboration are important for effective delivery of health services and patient care. Therefore, it is important to understand the current practice and pharmacist-physician inter-professionals' relationships to identify facilitators or barriers in enhancing community pharmacist services, mainly to advice on self care of minor ailments.

2 Results

2.1 Attitude to pharmacy profession

2.1.1 Medicine experts

There is a general agreement from physicians and the public about the pharmacist's expertise in medicines and pharmacotherapy. They both have confidence in the competency of the pharmacist to provide medicine-related information and advice when dispensing prescribed medicines. However, when it comes to the management of minor ailments, public participants perceived a preference to see the doctor first. They explained that a doctor has better knowledge about diagnosis and therefore makes an appropriate and complete treatment decision.

> *"We can say that the pharmacist is half the physician, isn't he? The physician knows better about one's condition while the pharmacist has experience about the use of medicine and doses. He tells me about the medicines and antibiotic and how many times I take it, before food or after food, because the pharmacist has experience but we always need the physicians."*
>
> ***Public 5, male, 47 years old.***

Most of the doctors indicated that they consult the pharmacist if they require medicines related information. Pharmacists, also, indicated that the doctors sometimes call them to ask them for advice on pharmacotherapy.

> ***"Researcher:** Ok tell me about the relation between you and the pharmacist in patient care?*
>
> *We need them in things related to side effects, doses. They are a good helper, and if they don't know they open the BNF and search for us,…, but most of the times they know, because we have a limited selection of medicines*
>
> ***Researcher:** How do you feel if the pharmacist inquiring about a patient prescription?*
>
> *It is ok, we are discussing, and sometimes they advise us to give another medicine and we are accepting, we don't take it personal."*
>
> ***HC GP 13, female***

However, one private doctor had a negative attitude toward pharmacist's knowledge on pharmacotherapy. This could be related to the fact that some overseas specialised doctors are recruited by primary private clinic and they continue providing advanced and/or specialist treatments that community pharmacists do not usually deal with in a daily routine practice.

*"**Researcher:** Does the pharmacist sometimes call you inquiring about your prescription?*

Yes, once I issued a prescription of Brufen® (INN: Ibuprofen; USA) for a patient, 600 mg tid, and the patient are diagnosed with osteoarthritis in knee and joints and the treatment is for chronic so it was for a month. So, the pharmacist called saying: the dose is high and the duration is long, so I asked him: what is the maximum dose of Brufen®? Do you know? They don't know the maximum dose, I told him it is 2400 mg and I only gave him 1800 mg, so I am still within the recommended range, also it is normal to give NSAID for a long duration in condition like osteoarthritis. So sometimes the pharmacist misinterprets why I prescribed this regimen.

***Researcher:** Did he accept it after you explained to him?*

I am not explaining, I am questioning him if he answered them so he will understand otherwise he will remain ignorant."

Private GP5, male

2.1.2 Competency and skills

Most of the public indicated that they do use the community pharmacy, however the nature of the use tended to be for pre-determined purchases in most of the visits, and was rarely for advice on symptoms. They explained that they tend to purchase medicines that they have previously used or are familiar with for recurrent or common symptoms they are able to identify. Although some people stated that they seek pharmacy advice on their symptoms, they usually tend to do so in an emergency situation, as a way of getting assurance before they'll be able to see a doctor, e.g. at night or holidays until they will be able to see a doctor first thing in the morning. The lack of awareness about the pharmacist's competency, led them, sometimes to hesitate in accepting their advice or recommendations that they are not familiar with.

"I choose if I know it and used it before or the family used it. I tell him that I need that medicines and that is it. If he tells me about anything else, I see it and if I feel it looks fearful, it is impossible to take it."

Public 7, male, 22 years old

***"Researcher:** What do you think of consulting the pharmacist on your common symptoms like fever and cold?*

I used to consult him sometimes but don't take the medicine, then I consult the nearest clinic at least.

***Researcher:** Why?*

Just to see what he is going to say, to make sure until you can reach the doctor."

Public 4, male, 30 years old

Although people acknowledge pharmacist's competency and skills, they highlighted that pharmacists' attitudes do not reflect their ability to handle minor ailments. Some people observed a variation in the competence and experience of the pharmacy staff who are working in the community compared to the ones working on a hospital setting. They indicated that the community pharmacists lack confidence, and tend to direct patients to see a doctor instead.

"He is qualified but the pharmacist does not have confidence in himself. He always says go to the physician."

Public 7, male, 22 years old

A member of the public who had a positive experience with a community pharmacy in overseas country, questioned the competency of the community pharmacy staff working in Oman to advice the public on self care of minor ailments.

"But here in Oman, my experience, they don't examine and don't ask questions. You go to {Pharmacy Name A} and ask him for a medicine he will just give it to you without any questions, however in {Country Name A}, they will ask you: is it for you? How old are you? What is your weight? And will explain for you how much dosage within how many hours and so on. But here just give it to you without asking. Therefore I don't advise anyone who got sick to go to the pharmacist, because the pharmacist is to refill the medicine that already you have and know i.e. prescribed by the doctor. As in some cases medicines are not available in health centre, so they ask you to go to such and such pharmacy, …, they will give you the dosage and the paper. In this case you will go to community pharmacy that's all. The pharmacist here is like a shop to buy from and not as to be treated in."

Public 2, female, 23 years old

2.2 Barriers to effective management of minor ailments

2.2.1 Communication

Patient and healthcare professionals' communication emerged as one of the factors that have an impact on obtaining effective management of minor ailments. Study participants illustrated the importance of good patient-HCPs communication. Having good communication skills could have a greater impact on patient satisfaction and trust in doctor's treatment decisions, even if the patient does not get the medication they were expecting or demanding.

"usually we can convince them about antibiotics, if you are well trained on communication skills it's very easy to convince them: no, you don't need antibiotic. Ok, I can do that it is very easy for me because I am an experienced person, so I can convince them and the patient will be very happy and satisfied, but the problem still there for the minor things the patient still will show up again but not for antibiotic."

HC GP 18, Male

"When my daughter was 18 months old, I took her to {a public Hospital Name A} and the doctor prescribed high doses of antibiotics and they were not beneficial. During that time, my uncle (my mother's brother) was visiting us, and he is the one who advised me to see this doctor. The doctor asked us to throw away all these antibiotics, he said that we shouldn't be giving the child these types of medicines, that is the time when I realised that the body could cure itself, this doctor also educated me with regards to self care, and we shouldn't directly take antibiotics and injections."

Public 17, male, 33 years old

However, poor communication between the patient and healthcare professionals was highlighted in the study as having the greatest influence on the attitude of public in management of minor ailments. A lack of communication during a consultation leads to poor patient/public trust or dissatisfaction toward the treatment decision provided by the healthcare professionals. This could also result in poor patient centred care that will lead to poor adherence to the treatment plan or irrational use of the healthcare services by seeking a second opinion. Most of the public participants were not happy about the lack of communication experienced when seeing the doctor; which hindered the effectiveness of the consultation and lead to poor adherence to treatment dispensed.

"I noticed that some doctor will give you an answer in rush even in private, so it doesn't make you feel comfortable when you see the doctor in a rush and give you a quick answer and that's it, so it is like they want you to leave so they can see others."

Public 14, female, 34 years old

"You only sit on the chair and he uses the computer, he does not talk to you, you feel more comfortable with the person who talks to you."

Public 7, male, 22 years old

Furthermore, lack of communication between the public and community pharmacy staff was one of the barriers to consulting the community pharmacy for advice on minor ailments. Pharmacist failure to initiate the dialogue to gain the required information to make a correct treatment decision gave the public a negative impression about pharmacist's competency in providing proper advice about their symptoms. Others highlighted the language barrier, which limited their ability to consult the community pharmacist, and therefore some public participants tend to request products by name rather than consulting the community pharmacist about their symptoms.

"The situation here is different, to get what you want it is difficult sometimes, for example although you know some words the language here could be a barrier, so it is better you go, and you know what you want, and you already searched for the medicine to know if it is good and so, I also ask my colleagues who are doctors to give me name of medicines."

Public 19, male, 55 years old

Healthcare professionals were aware of the importance of having good communication skills and building good relationships with the patients/consumers. They identified two main barriers: language and workload, that limited them from delivering effective consultations and gaining patient satisfaction and trust about treatment decisions.

2.2.2 Language barrier

Healthcare professionals who are not native Arabic-speakers, explained that language barriers could limit their ability to give advice when patients consult them. Although they acknowledged that essential information is given, they cannot discuss or provide health advice or education because of language barriers. Community pharmacy staff explained that language barriers could limit their ability to give advice when patients consult them. Although some indicated that they learned Arabic when they started to practice pharmacy in Oman, their language skills were limited to giving dosage instructions and relaying some clinical indications. They explained that working in rural areas helped them to learn Arabic because only a few people speak English in comparison to the city.

> *"Actually, initially it will be a problem for the pharmacist, when I came I don't know any single Arabic word but I worked with some other colleagues within at least two months at least dose I know how to dispense so slowly it will come; in interior, here almost in Muscat no issues, almost with English we can manage."*
>
> ***Community Ph. 2, male***

Number of pharmacists expressed their desire to improve their Arabic language skills to give more advice to their Arabic-speaking customers. One pharmacist explained that although, few of her customers cannot speak English compared to other branches in different areas of the city, she expressed that it was necessary to learn Arabic to give sufficient advice to them.

> *"It is not a problem, but I have my own interest to learn Arabic, because in India for a people who speak English I can talk, all advice I can give them, but Arabic if I don't know, can't tell them, you know, if extra advices I want to give, so I am giving more importance to learn Arabic."*
>
> ***Community pharmacist 24, female***

This problem is not limited to the community pharmacy only. Some healthcare professionals who are working in the primary health centres also experienced language barriers when communicating with patients. However, for those who were working in public health institutions, they were always surrounded by Arabic-speaking staff members who were able to help them with interpreting the information for the patient.

> *"I try to learn and manage, sometimes I ask other staff, because the in-charge was helping me to advise on "how much" and I learned how to write in Arabic at least: 'when necessary', 'at night', 'on the morning', so I am writing and giving. I try to communicate with the patients and counsel them but I don't know how to advice on 'Piles medicine', but I am asking the staff and I am learning."*
>
> ***HC Ph. 22, female***

> *"Actually I don't speak Arabic, I am learning, but I do understand and at least I can deal with situation, you know, that I don't miss the important points, ok and if I have a problem I'll ask the nursing staff if available and sometimes students are sitting with me, sometimes new doctors are siting with me, they know Arabic more than me, and I can understand what patient is telling me but I can't counsel him properly, so I call whoever the staff member is free: can you come to the clinic and help me with the translation, and they do, and other doctor if expat patient comes and he does not know Arabic, they call me can you talk to, or staff nurses if available, like other day I could not find anyone who is free so I had to call from the medical record, he was sitting free and he said: yah ok I'll help. You just have to adjust it, according to how the situation is."*
>
> ***HC GP19, male***

It appears that there is no standard procedure on providing training and support for the staff to enhance or develop their Arabic counselling skills. Some community pharmacy staff explained that they are initially sent to practice in interior areas to learn the language, or that they tried to access online resources to help them improve their Arabic language skills.

"Here no problem in Muscat at all, sometimes I am replying what they are asking in Arabic and they continue in English, they don't have any problem with the language, but in the interior, yah especially with the {south Asian Nationality}, and that's why usually when first come they put them interior for the first two to three months to catch the language."

Community Ph. 3, female

2.2.3 Workload

Physician's workload and limited consultation time was identified as main communication barrier for physicians working in the public health sector. Workload prevented the doctor from providing or answering all the patient inquiries, causing him/her to leave without providing full understanding.

"This one I work in it is very busy it can goes up to 40 – 50 patients a day and when we compare it in general, it is considered a large number; However I worked also in {Polyclinics Name} (not in Muscat), and I used to see 60 -70 patients during the seven hours shift,.., and it was more difficult there because the patients does not have his vital measurements taken before he/she sees you, so I have to take this measurements first i.e. blood pressure and temperature, and this can take two minutes and then one minute only for consultation, for him to explain he needs ten minutes, so you do the calculation and this time spent with one patient, you could of see two other patients, and patients outside are shouting because of waiting. This is one of the reasons that cause problems in the centre and does not give you a chance to explain for the patient or think correctly."

HC GP 15, Male

Physicians who have fewer patient to see in average day, an appointment system, or had completed further specialised training e.g. family physician programme, had perceived good communication time with the patient.

> *"**Researcher:** some patients say: when we go to the private, we get better care, but when we go to the government it is crowded and we are just a number and they just want to finish, they don't communicate with us. what do you think?*
>
> *This is I admitted is a problem, but even I saw in the private the waiting list is also same but they are staying, but one of the reasons that we in the governmental hospitals, we are not giving the proper communication and the private are abusing this point, they are giving health education over up to wrong health education, which make the patient believe that they know everything and we don't know anything, even if we practiced the right medicine, and they doing the wrong, the patient believe the opposite because they are spending time with the patient, and trying to explain even if they are saying wrong information, but the important that he explained, that he spend more time with the patient."*
>
> ***HC GP 10, Female***

> *"I usually explain for most of my patients these things, I don't know what influenced my practice, is it because of the training I got to be a FAMCO, but I did not have this mentality 'of explaining' when I started practicing as a GP. Afterward I tried to improve it further, it is a skill and you shouldn't blame the doctors because sometimes they are very busy to see all the patients that they have to finish during their shift hours."*
>
> ***HC GP 15, Male***

On the other side, some physicians indicated that having a good communication with the patient depends on the individual's personality of the healthcare professionals; as it was observed that some doctors have a manageable workload, but they still do not communicate effectively with the patient.

2.3 Physician and Pharmacist Inter-Professional Relation

2.3.1 Understanding the roles and responsibilities

The primary healthcare system was perceived to be based on a hierarchical approach that relied on doctors' decisions. Pharmacists were perceived by the public and the physicians to not be fully involved in patient care. They tend to refer the patient to the doctor if he/she will like to discuss about the prescription or were requesting clarification about the prescribed treatment. This indicates that there is still a way to go to achieve a multidisciplinary approach in patient care. Although pharmacists were recently assigned to the primary health centres to participate in the chronic management clinics, their roles and responsibilities are not well documented and there is no standard guidance on how they should fulfil this role. Although some doctors explained that they do not mind having pharmacist checking their prescribing practice, this can vary according to the individual physician's experience and attitude toward the pharmacy staff.

> *"I don't mind the pharmacist coming and reviewing the dose, I may be wrong, I see some other doctors saying to the pharmacist: you should not interfere, I want to give this dose. It is wrong to respond in this way, by this attitude you can affect your relation with the pharmacist which you can be in trouble because you decided to give that dose and can cause problems, and it is not his responsibility at that time because you refused to listen to his recommendation, but I am trying to have a good relation with them because they are going to help me at the end, although I may be more clever and smarter than them, I learned more than what they learned, and I may know about medicines more than them, but I may overlook and it definitely can happen sometimes, and you don't want this to happen, so they could help and advice you in this, this is my principle."*
>
> ***HC GP 15, male***

Some doctors explained a variation in the pharmacists' attitude towards patient counselling. Some also highlighted the poor counselling role of some of the pharmacists working in the primary health sector, and that they are relying on doctors to teach

patients about medicine use. The system is highly dependent on the doctor. Although the doctors are expecting pharmacists to counsel patients on how to use medicines, pharmacists were found to not appropriately fulfil this role. Pharmacists were perceived to counsel patients about how to take oral medication but not on other medicines that have special administration instructions e.g. pessaries, inhalers or injections. Although this is the duty of the pharmacist, some GP indicated that lack of private counselling room could be the reason.

> *"Here in the {hospital Name A}, they check the previous prescription with the current one, in case patient with chronic condition, so in case you changed the dose or added a new medicine, they will call you, first they will check your comments on changing, if you did not document it, they will call you inquiring about the change based on previous prescription, and we will justify it for them. Which are good, but in the primary care we don't have it, also in {hospital Name B} we don't have this system,…,I once prescribed vaginal pessaries for a patient, and I did not tell her how to use it, she went to the pharmacist and once she got in her car she opened the box and was surprised and she came back to the pharmacist asking him but the pharmacist told the patient: go to the doctor, she will explain it for you, so I asked her haven't the pharmacist explained to you? And the pharmacist only told her to take it two times per day, and some they also advice if before or after food, that's it only but in method of application not at all.*
>
> ***Researcher:*** *What about asthma inhalers and so?*
>
> *Doctors do this, also insulin is not the pharmacist who do the counselling, and it is either the doctor or health educator. In the hospital, the pharmacists do the counselling based on our request for example for asthma inhaler, but if he was not available or busy and patient has to be discharged, doctor counsel the patient. I don't know about other health centres but where I work, if I am planning to initiate insulin injection for a patient, you have to teach him first of how to use it, because pharmacist will only counsel the patient by telling him: keep it in the fridge and use this amount of this and so., only and he will not tell him how to use it, and mixing it, the technique and so."*
>
> ***HC GP 8, female***

"He is only a medicine dispenser. When the pharmacist dispenses the medicine for the patient he does not counsel him on how to use or how to store the medicine

Researcher: *How did you know?*

The patient come back to me after collecting his medicine and say: this medicine I got from the pharmacist I don't know how to use or he/she did not explain for me how to use it, you wrote three medicines for me, I don't know how much I should take from each."

Private GP 5, male

Some doctors indicated that there is a variation in competency between different pharmacy professionals explaining that the knowledge of pharmacist is better than the assistant pharmacist. There is also a different attitude of the doctors towards the different pharmacy professionals working in the health centre, with some doctors having a preference towards pharmacists over assistant pharmacists with regard to clinical knowledge.

"In my health centre they are very supportive, I feel before we had only assistant pharmacist, at that time we are not relying on them a lot, but now we have pharmacist, we are relying on them on medication, sometime I am having patient who will give me a new medication I don't know it, instead of looking for it on internet, Instead of wasting my time to check, I just call the pharmacist, give her the name, she'll check then she'll give me the answer, sometimes the doses if I am not sure I let her to check, side effects, so they are doing a great job."

HC GP 10, female

On the other side, some doctors have not felt any difference between the pharmacist and assistant pharmacist, indicating that they both have a good knowledge about medicines.

> *"According to my experience here all of them are good, from pharmacists to assistant pharmacists, all of them are helpful and of good knowledge, even if they don't know they will say: doctor, we don't know, we'll check the BNF, or I'll check, give me time., they'll not say something from their mind or they'll check the leaflet of that medications."*
>
> ***HC GP 11, female***

In general, both the pharmacy staff and physicians indicated that they have good relationships and collaboration with regards to patient care. A negative attitude toward pharmacist interventions was occasionally reported in the private sector but not in the government sector. The environment on the government practice tended to be more towards collaboration and agreement on decision making, compared to the private sector that reflected the dominance of doctor's decisions which should be followed by the pharmacists. The working relationship between the private GPs and community pharmacists were perceived to be limited to basic prescription interventions that included: (i) unclear instructions, (ii) missing information or (iii) replacing non-available brand of medicines. Although some explained that when they discuss patient's therapy, the doctors seem do not appreciate it.

> *"In Oman, there is no role of the pharmacist in the community, there up to now I've seen, in clinic type, doctors communicators are dominating more, and the pharmacist work is just to give the medicine, either the prescription is right, either wrong, the medicine is necessary for that patient or not necessary, it is not at all considered by the doctor, your duty what I am writing you have to give."*
>
> ***Community pharmacist 14b, male***

2.4 Extending the role of the pharmacy profession

The study participants were asked about their opinion about enhancing the pharmacist's role to advise the public and patients about minor ailments. A bipolar view was perceived toward pharmacist taking this role from both, the public and healthcare professions. Most participants welcomed the move toward pharmacists providing advice about minor ailments. They highlighted the advantage of the access to the community pharmacy to be more convenient and easy to approach, and that this will help to free up the doctor's time for seeing more critical cases. However, those who showed a preference to use the pharmacy services indicated that the pharmacists in Oman are not confident in practicing their role, when comparing it with a previous experience they have with overseas community pharmacy. Patients' concern was related to the competency of the pharmacists and their ability to make the right diagnosis. Some explained that they not ask the necessary questions or preform the diagnosis procedures that usually doctors do during consultations. There was a lack of general awareness about pharmacy professional competencies and skills, due to the public not always having a positive experience with pharmacy consultations. This has limited some people's acceptance about accessing the community pharmacists for advice.

> *"I have no experience with that, I don't consult the pharmacist because this is a waste of time. I will waste 30 or 60 minutes to get a medicine that might be wrong. The doctor is capable of diagnosing and has details of the symptoms in the computer, but, the pharmacist does not have experience."*
>
> ***Public 18, male, 62 years old***

Some doctors had a good awareness of the pharmacy profession and supported their role in advising the public on minor ailments. However, they emphasised that pharmacist's advice should be limited to over-the-counter products and that they should refer the patient to the doctor, whenever a prescription medicine is required e.g. antibiotics.

"Pharmacists dealing with minor conditions; see as long as OTC is there, over the counter then they can dispense medicines, to a certain extent. It is taking place, it is happening, …, as long OTC is available, pharmacist will be dispensing medicines, and patient will be buying medicines, as long as OTC is there, it'll happen.

***Researcher**: Do you think pharmacist have the ability to do it?*

They have, see here they know the effects of medicines, there is nothing wrong of dispensing medicines, but antibiotics they'll never do, only what they are licensed to do they are doing, OTCs, what they can give and that's only what they do.

***Researcher:** do they refer the patient to the GP if it is required?*

Yes, yes, when they feel, when the patients ask for medicines they'll tell, when they present the symptoms itself, pharmacist will say: go to meet the doctor and get a prescription. like that, there are cases like that."

Private GP 30, female

The doctors who were working in the public health sector supported the idea, indicating that it will help them to allocate their time for more critical cases. However, the two concerns raised were: the lack of standards or guidelines to be followed by the pharmacist that would be important to maintain the standards and quality of care; and the health system set-up that people still believe that nurses and pharmacists are seen as inferior in providing healthcare, and that most healthcare assessment and treatment needs to be approved by the doctor. Also, the doctors showed concerns about community pharmacists' conflicts of interest between their business and patient care "commercial motivation".

> *"They have to know, for example, if the patient need antibiotic or no, I am not sure if they know that, they may need some sort of guideline, so they know, at least to start with one thing in minor conditions such as upper respiratory infections and they are given a guideline to guide them when the patient need further assessment or not, and then he can prescribe for him the OTC."*
>
> ***HC GP 20, female***

> *"The language could be a barrier to this as will, because most of the community pharmacists are expatriates, we don't have a lot of Arab speaking pharmacists and the language could be a major barrier, I had a patient once with stomach ache and he explained in a way (using Omani metaphor)[‡] that non-Omani doctor will not be able to understand, so the language could be a barrier and the community pharmacist; most of them they know but they don't practice of course."*
>
> ***HC GP 15, male***

In general, GPs supported any move that could improve the access of the public to healthcare without placing a burden on the doctor's consultation visit on unnecessary cases. Most of the pharmacists supported the proposition that it should be part of their role, and they specified that their learned skills are not fully utilised in current practice.

> *"…Yah we need to, because our study was for five years a full syllabus and just dispensing what doctor is saying, this is anybody can do! We are not practicing what we studied. So patient is coming with any pain, any minor ailments we can manage no problem."*
>
> ***Community Pharmacist 3, female***

[‡] *See Appendix 20 (phase2-Int.15, pg. 15, line 39) for the metaphor mentioned.*

However, few healthcare professionals, who did not support the idea highlighted the issue of lack of patient acceptance, others lacked the self-confidence and believed seeing the doctor is better and safe, or they were concerned about patient misuse of the service if medicines can be obtained without a doctor's prescription. Some identified the need for training and guidelines to maintain the standards of advice given.

3 Discussion

Understanding the attitudes and relationships between the three stakeholders of this study identified how it impact in supporting and promoting self care. The findings discussed also helped in understanding the factors that limited the utilisation of the clinical skills of the pharmacy profession in the Oman. Pharmacist is an advisor to the public about everyday healthcare and is a key figure in the supply and delivery of medicines to the customer.(WHO 1998) Almost all of the lay people interviewed in this study had visited a pharmacy at some time in their life or their relatives had purchased a medicine on their behalf for their symptoms. It was perceived that the pharmacy profession has an inferior role in patient care, with the role of the doctor being more dominant in managing minor ailments. However, there is a tendency by the public to access the community pharmacy especially by the educated and by younger people, for fast and convenient access to purchase medicines for their common symptoms i.e. pre-determined purchase of medicine or request a product by name. Although some participants have not been in favour of the concept of managing minor ailments in the pharmacy, they have still accessed the pharmacy during out-of-hours to get advice until they had a chance to see the doctor.

3.1 Attitude to pharmacy staff

Both public participants and physicians in this study viewed pharmacy staff to be "experts in medicines". However, they were more cautious about treating the minor ailments in the community pharmacy without consulting the physician first to confirm the diagnosis. Previous studies showed that utilising the community pharmacy for health-advice is low. (Anderson 1998, Anderson et al. 2004, Bawazir 2004, El Hajj et al. 2011, Al-Arifi 2012, Jose et al. 2015) Individuals tend to access the community pharmacy to purchase a product based on individual previous knowledge and experiences of symptoms and used

products. Although individuals reported that they would consider consulting the pharmacist when it comes to minor health problems, their consultation is usually limited to purchase familiar products, or to get the pharmacist assurance or advice in case of emergency or out-of-hours until they can see the doctor for appropriate management. These beliefs are influenced by their understanding about the condition; their attitudes towards OTC medicines, and the demand for medicines e.g. antibiotics that they know they need a doctor prescription to be obtained.

The majority of people expressed that although pharmacists can be approached easily for advice on health issues or access to medicine, they still prefer to consult physicians in the first instance.(Bawazir 2004, El Hajj et al. 2011, Al-Arifi 2012) Physicians are considered the preferred and primary source of information. In a system where the doctor is considered at the top of the hierarchy or the centre of health service provision, people were found to have traditional beliefs and trust in GPs as the most knowledgeable and experienced healthcare professional. The physician dominates the healthcare system in Oman, similar to other gulf countries. Nurses and pharmacists have an inferior role in the care of the patient, with almost any sort of the treatment plan and orders including, health education, are initiated by doctors, who refer patients to other staff if further educational interventions are required.

The finding of this study support the finding from the previous studies which found that role of the community pharmacist in GCC countries is not well emphasised.(Bawazir 2004, Wilbur et al. 2010, El Hajj et al. 2011, Al-Arifi 2012, Al-Abdullatif 2014) There is a better recognition of the pharmacy profession role in patient care and therefore pharmacist was identified as a member of the healthcare professional team, however pharmacists are still not commonly recognised by the public as a first access for health advice on self care. Perception of pharmacist as a medicine supplier or vendor rather than as health professional was less strongly expressed by the public in this study compared to the previous GCC studies. (Bawazir 2004, El Hajj et al. 2011, Al-Arifi 2012) The lack of public

awareness' surrounding pharmacist abilities in providing advice about minor ailments could be a factor in not consulting community pharmacists for advice in the in first place, or they could also have had unpleasant experiences when seeking such information from the pharmacist, as was perceived by some participant in this study.

The demand for the pharmacy profession to change their image from medication supply oriented services to patient-centred care requires them to improve their communication and relationships with the patient/customer. The environment of the community pharmacy usually raises the public doubt about whether the pharmacist is directed towards business and profit, therefore this makes people cautious about using the community pharmacy for healthcare services. Evidence shows different levels of public acceptance on the types of the health service to be provided by the community pharmacy. (Anderson et al. 2004, Bawazir 2004, El Hajj et al. 2011, Gidman and Cowley 2013, Kelly et al. 2014) A high level of interest was expressed towards the provision of screening and health information. However people were slightly cautious to access the community pharmacy for advanced services such as obtaining vaccination or access to medical record.(Bawazir 2004, El Hajj et al. 2011, Kelly et al. 2014) Most of the people tended to be highly satisfied after they experienced or utilised a health services provided by the community pharmacy.(Eades et al. 2011, Anderson and Thornley 2014) This highlights the importance of improving public awareness about pharmacists' abilities, and pharmacist responsibilities to take the initiative and advertise for the patient care side of their profession over the business part.

3.2 Appropriateness of community pharmacy consultation

Poor consultation skills of the pharmacy staff were highlighted by the public participants as a barrier to utilising the community pharmacy. Gathering sufficient information and giving adequate information when responding to patient's consultations is important to gain people's trust and adherence to the advice provided by pharmacists. Pharmacists in this study were perceived to not apply the principles of effective consultations (information gathering, advice giving and follow-up) as a standard practice when responding to customer requests. This limited people's utilisation of the community pharmacy as a source of information and health advice. Studies from Arab gulf countries i.e. GCC, indicated that community pharmacy does not provide sufficient counselling advice or information about medicines unless the customer is requesting it.(Bawazir 2004, El Hajj et al. 2011) A review of the appropriateness of effective consultations concluded that most of the consultations were poorly practiced by the pharmacy staff in developing countries.(Brata et al. 2013, Brata et al. 2015) Some developed countries also highlighted the insufficiency of advice about medicines given by the pharmacist. (Kelly et al. 2014, van Eikenhorst et al. 2017) A review of literature found that pharmacist consultation on non-prescription medicines were preformed much better when people present their symptoms to the pharmacist compared to people who made a direct request for non-prescription medicine.(van Eikenhorst et al. 2017) In Canada, a group of participants were satisfied with the pharmacist medicine counselling, but they would like the pharmacist to provide them with more information on how to manage missed doses and efficacy of the therapy. This, however, is considered advanced information when compared to this study setting, whereas basic and essential information was missing in consultations.(Kelly et al. 2014)

In general, the pharmacy practice and services in developing counties were reported to be basic and of inferior quality in most of the developing countries compared to the developed countries.(Smith 2009) This study helps in identifying the contextual factors that limit the contribution of the contribution of the community pharmacy to patient care,

consequently suggesting the appropriate intervention in improving the practice. Barriers to appropriate consultation may be related to the pharmacy staff's overestimation of the customer's knowledge on the medicine, especially when they are requesting products by name. Other factors could be related to language barriers whereas pharmacist indicated that their consultations are limited to providing information on dosage and administration. This also contribute to the insufficiency of the information-gathered by the pharmacist to show the customer the pharmacist's ability to make appropriate decision on diagnosis and advice on minor ailments.

The study was based on self-reporting of both the public and healthcare professionals to the appropriateness of community pharmacy advice on self care of minor ailments. It is usually argued that individual self-reporting is usually intended to give a positive picture about his belief and attitude. Observational studies were found to report a lower rate of the appropriateness of pharmacy consultation compared to self-reported studies.(Brata et al. 2013, Brata et al. 2015) A review of studies related to this aspect showed a variation in reporting of the appropriateness of the services provided in the community pharmacy that is influenced by the method used in the study i.e. a large inconsistencies between self-reported behaviour and actual practice was observed in studies used two combined methods e.g. interview with simulated patient or observation.(Smith 2009, Brata et al. 2013, Brata et al. 2015) The study findings revealed a critical deficiency in the advice and management provided by the community pharmacy staff that raised the concern about the scale of the quality of the practice that could be underestimated in this study because it was based on self-reporting. The aim of the study was to explore the public and healthcare professionals attitude to the self care of minor ailments; identifying communication as a barrier and dissatisfaction of some of the public with the current approach of the community pharmacy staff highlighted the importance of further exploration of this subject. Therefore, it will be worthwhile to conduct further studies that use an observational, or stimulated patient methods to evaluate the counselling and communication skills of pharmacy staff in self care of minor ailments.

3.3 Communication and language barrier

Deficiency in communication could lead to lack of public/patient trust on and adherence to the treatment decision. Appropriate communication and education was highlighted by the study participants as a vital tool to improve satisfaction and trust about the treatment decision of the doctor or the OTC-advice given by the pharmacist.

Language barriers were identified as one of the factors that hindered the pharmacy profession's ability to apply principles of effective consultations (information gathering, advice giving and follow-up) as a standard practice when responding to customer requests. This could therefore limit people's utilisation of the community pharmacy as a source of information and health advice. This raises concern about the safety and appropriateness of information-gathering and advice-giving for people who visit the pharmacy for advice about minor ailments and purchase of non-prescription medicines.

Oman has a growing population of Non-Arabic speaking (NAS) workforce. Because of the shortage of Omani health workforce, the health sector both the government and the private are employing overseas health workforce to cover this shortage. In the government sector, Omani health workforce represent about more than 70% of the pharmacy profession and 40% of the total number of doctors, however, Omanis who are working in the private sector are less than two percent. There are no data about the nationality or language skills of primary healthcare professionals; until recently when the Minister of Health of Oman reported a conference of The World Innovation Summit for Health (WISH) in Doha in 2016 that is about "*60% of HCPs working in the private sectors do not speak Omani patient's language*".(WISH 2016) This could be higher percentage as it does not include the data about the language proficiency of the healthcare workforce who are working in the government sector. I am not claiming that all NAS health professions have communication barriers with service users because of the language barrier, but their communication is likely to be limited especially as there are no standard

regulations around the Arabic language proficiency within the MoH, and registration-to practice in the country. Although English Language is widely used after Arabic in the country, we don't know to which extent the Omani and other Arabic-speaking citizens living in Oman are able to express their symptoms in English.(Ethnologue 2015)

Several papers addressed the issue of language barriers and strategies to overcome language barriers during pharmacy consultation.(Bradshaw et al. 2007, Dilworth et al. 2009, Chang et al. 2011) although in this study pharmacists are dealing with a small group of patients or pharmacy users that do not speak or fluently speak the country's common tongue language e.g. English. In Oman, the situation is different, whereas most of healthcare professionals working in the private sector do not speak the common language of the country i.e. Arabic. However, this strategy can be valid to this setting; examples are to: recruit frontline staff who speaks the patient's language; translate medicines label into patient's language; provide educational materials/leaflets in multiple languages, and use of appropriate interpreting and translation services to maintain patient confidentiality.

Doctors who are working in the public health sector also addressed the importance of patient communication for improving patient satisfaction and care. Poor communication between the patient and primary healthcare providers were addressed in Abdulhadi et al. (2007) study that explored the perception of patients with type two diabetes and the primary healthcare providers. The study identified the component of the encounter that the patient was not satisfied with, e.g. unfriendly welcoming, one-sided conversation, patient not encouraged to ask question. Patients expressed that they would like their GP to communicate with them about their conditions.(Abdulhadi et al. 2007) Our study showed that similar components were reported by the participants that had a negative impact on patient and doctor consultation. Furthermore, we identified some of the barriers and work environment that contributed to the poor communication e.g. workload.

3.4 Multidisciplinary team and healthcare

An effective multidisciplinary approach can have a positive impact on the success of the service provided. Healthcare interprofessional relationships were highlighted to be important for the effectiveness of any service or care provided for the patient. GPs belief and attitude could influence the public use of pharmacy for self-medication.(Morris et al. 2001, Hughes and McCann 2003) GPs who are encouraging and supporting the patient to self medicate for minor ailments could direct people to use the community pharmacy to purchase over the counter medications. Conversely, GPs who showed more fear that patient's serious illness could be overlooked, showed no preference toward the patients consulting the pharmacist for advice on minor ailments. Doctors working in the public health scoter were more supportive toward patient self-management of minor ailments compared to those who are working in the private sector. This could be related to the burden of workload in the government sector that most GPs showed a preference to address this issue to have more time to see the critical cases. Whereas in the private sector, they may have a concern of profit and business if patient was not utilising their services for their minor conditions.

Although private doctors did not welcome the pharmacist interfering with their prescribing practice, the public doctors questioning the reluctance of some of the pharmacy staff to practice their role. Therefore the awareness of the GP about the skills and training competency of the pharmacy staff can play a role in facilitating the expansion of the pharmacy staff role in the primary care.(Hughes and McCann 2003) The setting of the public health centre, with having on-site pharmacy, seems to have helped improve the collaboration and inter-professional relation between GPs and pharmacy staff. However, the community pharmacy staff are finding it difficult to have a good collaboration with the physician.

This study identified the role of communication and relationships between the patient and the healthcare professionals with regard to the self-management of minor ailments. A self-medication practice was observed among the public participants; however, because of the lack of support and access to information from the healthcare system, this can cause inappropriate or unsafe self care behaviour by the public. Doctors were identified as the primary source of health advice on minor ailments. A lack of support from community pharmacy limited the public to seek health advice for self-management, which leads to utilise the pharmacy to purchase products by name. Improving public and GPs awareness of pharmacist's competency is important if the role of community pharmacy in minor ailments is to be enhanced. However, to maintain access to quality healthcare, pharmacy practice standards, and regulation has to be reviewed to support them in delivering the service and to achieve a standard and high quality of consultation in primary care.

4 Conclusion

This is the first study in Oman to explore the public attitude toward the primary healthcare professionals and the interprofessional relationships. The interprofessional collaboration of the multidisciplinary team working in the primary healthcare were found to be better recognised in providing better patient care within the government/public health sector but very limited in the private sector. in addition, poor understanding of the role of the pharmacists and lack of communication are the main barriers to consulting the pharmacist for minor ailments. Therefore, more work has to be done in promoting the community pharmacy abilities and overcoming the barriers, such as, patient-pharmacist communication, advice-giving on minor ailments, professionalism and standard of practice.

Chapter 5 Theme 3: system-related factors

1 Introduction

System-related factors were found to have an influence on the self care of minor ailments by the public. Factors that are related to the setup and practice of the healthcare organisations were identified to hinder patients to have an active, self care role. The factors identified in this study are found to be mainly related to: the organisational setting and the practice of the health centre, and lack of information and support for both the public and healthcare professionals. This was found as a barrier to promote or support self care within the primary healthcare in Oman. In this chapter, the factors will be explained in detail to provide a better understanding of the current practice and how this influenced the management of minor ailments, and hence the utilisation and/or the provision of the healthcare services, with regard to self care of minor ailments.

2 Results

2.1 Organisational setting and practice

Most healthcare professionals, who are working in the public health sector, reported a positive attitude toward supporting the promising of self care of minor ailments to the public; they indicated that the majority of patients, who visited them on a normal working day could manage their conditions without seeking GP's advice. However, factors related to the structure and procedures of the Omani healthcare system were highlighted as barriers to support self care and patient empowerment.

2.1.1 Standard of care and role responsibilities

General practitioners indicated that the variation in practice within one institute influenced the patient decision in the management of minor ailments. Although some physicians try to educate the people about when it is appropriate to see the doctor when it comes to minor ailments. Others do however prescribe unnecessary medicines to ensure patient satisfaction. Variation in prescribing practice and treatment decision was addressed as one of the challenges that need to be considered to improve the quality or utilisation of the health services.

> *" Although 5-10% of the patients they don't need any medication, only health advice of how to prevent, for example AC[§] is in every house and we misuse it sometimes by both the children or the adults, this causing the children to frequently have cold symptoms, but they don't usually have infection, we can't give cough medicines for one to two years old children, and we give Adol® (INN: paracetamol, UAE) even if he does not have fever, as analgesic and advise them to give more fluids and warm food."*
>
> ***HC GP 23, female***

The prescribing restrictions applied on the national formulary has also limited the physicians to apply an evidence medicines based practice in the management of patient's conditions. The general practitioners explained that the restrictions on prescribing some of the medicines for the managemnt of minor ailments, limited their ability to effectively manage patients' conditions that are believed to be minor. This, therefore, requires to refer patients to the specialised polyclinics, but some patients preferably requesting to purchase the medicines from private pharmacies to avoid delays.

[§] *An abbreviation for "Air Conditioning", a common term used in the country.*

"Not to that asset, it could be revised and some medicines added so it can reduce a load of referral, also from the point of facilities and instruments and the like, there are things can be done at the level of the primary healthcare but unfortunately not provided."

HC GP 15, male

*"**Researcher:** Do you feel the system affect your decision of managing the patient's condition, because of the restriction and non-availability of medicines?*

Kind of, see for Loratadine, the patient who is going to drive and got a runny nose and others, I can't prescribe a non-sedating one, because Chlorpheniramine is a sedative antihistamine, so I can't prescribe non-sedating one.

***Researcher:** so what do you think? How can this be improved?*

There should be some medication. Even us, the junior and the medical officer should be allowed to prescribe, I feel Augmentin® it should be prescribed, Loratadine for example, yeah and these are few examples of medications right now are not coming on my head, which should be allowed."

HC GP 29, female

Although some of the healthcare professionals working in the public-sector indicated that they advise the patient to buy the medicine from the private pharmacy to avoid the referral process and waiting time, they explained that it is against the regulation of "free treatment". Therefore, they offer this advice for people who are only willing to pay out-of-pocket.

> *"The system does not allow them to do this kind of practice, if it was reported to the ministry, although the physician tries to make it easy for the patient to get the medicine, because the patient can go and complain, and if the patient demand for that medicine the ministry will question the doctor: why you wrote a prescription for non-available medicine? So, he should not write that prescription but it depends if the doctor and the patient were agreed, if they feel the patient is willing to buy."*
>
> ***HC Ph. 4, female***

Having no clear unified understanding or assessment of role responsibilities assigned of the healthcare professionals working in primary care premises caused the doctor to be the main person responsible for the delivery of patient care. Some tasks, which are identified to be the responsibility of the nurse or the pharmacy staff, were found to be delivered by the doctor e.g. blood-test collection, medicines counselling. Physicians explained that patients were sometimes unnecessarily referred to go back to doctors for health inquiry or to get a thorough counselling in medicines that had been prescribed. This could contribute to the unnecessary workload and insufficient time of consultation.

> *"I once prescribed vaginal pessaries for a patient, and I did not tell her how to use it, she went to the pharmacist and once she got in her car she opened the box and was surprised and she came back to the pharmacist asking him but the pharmacist told the patient: go to the doctor, she will explain it for you., so I asked her haven't the pharmacist explained to you? And the pharmacist only told her to take it two times per day, and some they also advice if before or after food, that's it only but in method of application not at all."*
>
> ***HC GP 8, female***

In addition, a deficiency in the appropriate allocation of tasks that match the healthcare professional's competency and skills was perceived when interviewing the healthcare professionals. It was also explained by the doctors that initiation of insulin injection or asthma inhalers require the doctor to do the required counselling on administration technique. General practitioners explained that patients were referred to nurse or the health educator for further education on the condition and medicines use. Although pharmacy staff are available in every health centre, the doctors did not commonly identify their role in patient education.

> *"Yes, we do refer the patient, especially in diabetic clinic, we have special diabetic nurse, although she is not specialised. In the diabetic centre we have specialised nurses, here we have ordinary staff, still senior enough, so for example for newly diabetic or the one we start them on heavy medication, some need to start on insulin directly, they need to sit with them for one hour or two, it is not like I can spend that time with the patient, so I tell the nurse this is the medication I am going to put him on, to take him and to counsel them."*
>
> ***HC GP 19, male***

2.1.2 Continuing professional development

Lack of advanced and trained workforce is a challenge to provide the quality of the care aimed for. Healthcare professionals identified the need of training support to effectively implement or run any services. Although the examples they gave were not directly related to the management of minor ailments, the findings represented that the training provided is very limited and is not usually tailored to the individual's learning needs. A pharmacist, working in the public health sector, explained that there is a need for practice-focused and pharmacy-related CPD courses rather than a general medical or theory-focused.

> *"There is no training, ..., we went once for emergency medication for first aid, this not for the pharmacist, like they gave us the anatomy of the heart, how to manage emergency cases with bradycardia, we are not dealing, we are a community pharmacy. They mixed it all together, nurses with pharmacists, this course or what they call it this for nurses, that's ok because they are in emergency and working also in hospitals but for us they have to do a training of how to deal with OTC medications, the main side effects, general things we don't want to go deep in pharmacology."*
>
> ***HC Ph. 7, male***

Most of the training offered for the community pharmacy staff were perceived to be product-oriented rather than clinically oriented.

> *"**Researcher**: Do you receive training in the management of common conditions for example?*
>
> *"Meeting like CME and that, any company related they used to about their products, it will be there and some updating if there to update our knowledge. There is one workshop by MoH once a year, training for private sector only, is about products, they give sessions about the use of medicines by the companies."*
>
> ***Community Ph. 2, male***

2.2 Workload and demand

The health centre was perceived to be operating as an emergency and walk in centre; in addition to the management of other long-term conditions and community services e.g. vaccination. People can visit the health centre anytime during the working hours without the need to call the centre for an appointment. However unnecessary access could also cause unnecessary burden, in the health sector and doctor's workload, if there is no effective system to manage the daily visits to the doctor. Having the primary health

centres as the first and only access point for free treatment; healthcare professionals, working in the public health sector, explained that a disagreeable statement from the higher authority is given when raising the challenge faced by the health centres staff because of workload and public's attitude in utilising the free service.

> **"***Well, I mean, 'we cannot prevent people from coming' this is the answer from them (higher authority); of course, and with other Shura councils[**] who will exacerbate these things, but I think we still need health promotion, we should concentrate more on this, because of waiting and as a result the waiting time will increase and will affect the serious conditions, who are really sick and need attention, they are in the queue."*
>
> ***HC GP 18, male***

Workload was identified as a barrier to effective patient-doctor consultation; most of the GPs working in the public health sector identified workload and very short consultation time as a barrier to providing patient-centered care and/or to provide sufficient information on self care. Although it is expected for a GP to have an adequate consultation time with the patient 10-15 minutes during their work shift, some GPs, who are working in the public health centres, identified that in some areas they would have to see more than the average number of patients, which limit the consultation to less than 10 minutes.

[**] *The Consultative council (Majlis al-Shura) is the lower house of the Council of Oman. It is the only legislative body in Oman of which all members are democratically elected. (https://www.mofa.gov.om/?p=784&lang=en)*

"I used to see 60 - 70 patients during the seven hours shift, so what do you think the time you spend with every patient if you were going to see 70 a day, not a healthy practice, and it was more difficult there (outside the city) because the patients does not have his vital measurements taken before he sees you, so I have to take this measurement first, blood pressure and temperature, and this can take two minutes and then one minute only for consultation, for him (the patient) to explain, he needs ten minutes, so you do the calculation and this time spent with one patient, you could of see two other patients, and patients outside are shouting because of waiting. This is one of the reasons that cause problems in the centre and does not give you a chance to explain for the patient or think correctly."

HC GP 15, male

This was also reflected when interviewing the public, who showed not being satisfied with the public health services and treatment. They highlighted the issue of lack of sufficient communication or effective consultation with the GP as the doctors rushing to finish the waiting list. Some identified the long waiting time and crowded health centre as a barrier to access the free treatment, and consequently showed a preference to use the private sector, regardless of the cost.

*"**Researcher:** When you get these symptoms, do you go to the health centre to get treatment?*

It depends. Sometimes I do go to the health centre, but if it is crowded, I go to the clinic instead."

Public 12, female, 45 years old

2.2.1 Sick leave

Frequent requests for medical reports to justify sick leave for working individuals and students were identified to encourage the people to unnecessarily using the public health sectors. Healthcare professionals working in the public health centres identified that although some people were able to handle the symptoms effectively at home they visit the doctor just to request a sick leave certificate to justify their absence from work. Doctors in the public health centre explained that the systems require the patient or patient carer to see the doctor for sick leave if he has to take a day(s) off from work or school, they believe that this caused unnecessary load. They explained that they had cases that were not requiring to be examined or get a prescription because their symptoms were self-limiting and they could handle the condition at home. However, they had to visit the doctor if they wanted to get a sick leave certificate.

> *"We can say 40% of the patient they are trying to self-manage, now a day even the educated mother will say: I give my daughter or son three days paracetamol regularly but still the fever there., so they'll come after three days, so some mothers they are educated, but what happen even if they have fever they can't go so they will come for sick leave, if they are working or they are students, and like this. So sometimes they are coming: doctor I have this medication, but I can't go because I have a fever so I want sick leave."*
>
> ***HC GP11, female***

2.2.2 Appointment and triage

It is a challenge for doctors to work in a setting that lack of efficient triage and/or appointment system in primary healthcare centres. Although some healthcare professionals, who are working in the public health sector, explained that the appointment

system was terminated shortly after its implementations in the public health centres; and some of them indicated that they continued to apply an appointment system in their health centre. Doctors explained that this helped to manage the workload, and seeing a manageable number of patients per visit compared to their colleagues who are working in an health centers that does not have an appointment system in place.

> ***"****The average where I work at the moment, I see 30 – 35 patients per day and I'll say around ten of them are trying OTCs or home remedies.*
>
> ***Researcher:*** *are they considered to cause a load in the health centre?*
>
> *Not really at the moment, I'll not complain about my place at least it is better than other places especially the peripheries, in periphery it can be 60 – 70 patients per doctor, and I see 30-35patients, especially, the people in this area are quite well educated."*
>
> ***HC GP 19, male***

Nurses working in the public health sectors are responsible for taking the vital measurement of the patient on arrival, and patients are usually asked to wait to see the doctor after the measurement were taken. The nurses are not providing any advice and consultation prior to doctor assessments. Doctors' working in the public health centres, therefore, highlighted the importance of activating the triage system, which will help to refer only the critical cases to them. But they explained that lack of trained staff to handle the minor illness or cases; and the public may not accept this model of practice, as they are not familiar with. This therefore could limit its implementation.

> *"To have a triage system we need to train the staff, the staff we have now are not trained and to provide a good number of the staff, we need at least two staff at a time, appointment system may help a lot as well, the reception should have an awareness of what to ask when assessing the patient for taking appointment."*
>
> ***HC GP 8, female***

> *"The ministry is thinking now of nurse practitioner but it's still not established, but our problem is whether the community; are they going to accept that, ok this is the problem."*
>
> ***HC GP 18, male***

2.3 Information and support

Educating the community about self care to maintain a healthy lifestyle, or self-management of long-term conditions is one of the main roles of primary healthcare system. However, the challenges faced by healthcare professionals limited them from practice effectively this approach. Both the public and healthcare professionals identified the lack of education support provided to the public if they are going to have an active role in self care. People identified that for the individual to take an active role in their health they should have a good health knowledge and skills. It was indicated by the study participants that it is not advisable for people with the current situation of the lack of health education resources and support to be advised on self care. Health education, therefore, was identified by the study participants as one of the vital components if a change in the attitudes of the public toward the management of minor ailments and utilisation of the service.

> *"We still need to do more work in health education in our community especially because the patient will still run to hospitals for simple things. But some people, maybe the highly educated people they know how to manage, sometimes they do not show up in the health centre."*
>
> ***HC GP 18, male***

People who were found to practice self-medication and use community pharmacy to access OTC medicines recognised the importance of having suitable health knowledge for

effective and safe self care of minor ailments. They recognised the importance of self-acquiring of medical information to be able to preform self-medication.

> *"I use medicines, but look I don't recommend anyone to use medicines (self-medicate) unless he reads about them, because every medicine that you buy has an enclosed leaflet that contains all the information, preliminary information, the basic. But I for example in my case, because I have a very long medical history of illnesses and so (asthma, glucose intolerance), I educate myself because of it, but there are people who are not aware of what this medicine is and how it can affect your body?! So I don't advice."*
>
> ***Public 2, female, 24 years old***

2.3.1 Source of information and advice

Although public awareness and education about the medication they are taking is encouraged, the study showed that people are not obtaining sufficient information from healthcare professionals with regards to medicines information and they have to request it. Healthcare professionals had positive views toward patients who had an interest in getting detailed information about their medicines. However, a lack of providing sufficient information by healthcare professionals was reported during the study. Related explanations given included: limited consultation time, community pharmacist depends on the patient to ask for information; and public pharmacist is assuming that doctor explained the necessary information about the medicine.

Workload and shortage of primary health centre clinical staff were identified as factors that contributed to the lack of support provided to patients on health education. Healthcare professionals who are working in the public health sectors addressed the

challenge they face with the workload and shortage of staff that prevented from providing an adequate health education and support for the community.

> *"The problem that happens here in the health centre is when we are crowded, we have a lot of patients, we can't give the patient more than 10 or 15 minutes from our time, so we can discuss about what they have, and the treatment what we give, but to give him more about home and what will they do, will take more time, so if we have a lot of patients we can't give them this time."*
>
> ***HC GP11, female***

> *"Every time we have an event, we the pharmacy department plan and select a topic to talk about in the waiting area, and assign two to three days or sometimes a week, but it depends on the circumstances of the pharmacy, sometimes we have a shortage of staff, so we discussed this idea and we planned for it but we had a shortage and workload."*
>
> ***HC Ph. 16, female***

People are commonly consulting the doctor first for assurance on treatment or to clarify the accuracy of the information obtained from other resources e.g. internet. The public participants indicated that they consider asking the pharmacist if they forgot to ask the doctor during the consultation and wanted more information on the medicine prescribed. However, most of the public did not recognise the pharmacist as a first access point for health-related information or advice on the experienced sign or symptoms.

> *"Usually from the physician but the pharmacist gives me information on the quantities and doses and the like, but usually from the physician."*
>
> ***Public 6, male, 31 years old***

The community pharmacy can play a vital role in public health and provide advice on self care, but they were found to have a limited or absence involvement toward public national awareness campaign or activities. However, most community pharmacy staff did not acknowledge the importance of their involvement in public health and, therefore, directed their suggestions to MoH for consideration.

> *"What I know, the awareness we can do if a diabetic patient came we used to advise them and to teach their children don't take for them Pepsi, fast food and junk food, better asks them to avoid. So just to the maximum we are doing but government sector they do something in their language, MoH, something related to the medicine they are doing, big posters, how to get medicines or all, but event particularly for diabetes I think now issuing machines for free I think, bBut service they are doing, even how to prevent diabetes they have to do some big change otherwise it will be very difficult."*
>
> ***Community Ph. 2, male***

> *"I think one special training was there for remembering there were one training by the ministry, nutritional education for the patient; and I think every diabetic patient he knows very well what to take and what not to take. Only for those who are asking for weight reduction tablets I am offering some tablets we have and some advices."*
>
> ***Community Ph. 3, female***

People were perceived to commonly consult their relatives on their symptoms. Although most of them are consulting their relatives e.g. the mother on the use of treatment, few indicated that they consult a relative who are a healthcare professional.

> *"My sister is a nurse, and sometimes I ask her about medicines, **...,** I usually don't consult her a lot, but, if someone advised me to take a certain medicine, I call her and ask her opinion."*
>
> ***Public 17, male, 33 years old***

Public participants commonly acknowledged the use of internet and social media to access health information. They explained that they use the internet -when the information provided by the healthcare professionals was not sufficient- to check the symptoms, a recommended treatment for their condition, or to get further information on the prescribed medicines.

> *"If the doctor has prescribed the medicine, then I'll ask him. Otherwise, I read about the medicine on the internet and its advantages and disadvantages. If I noticed that it has lots of side effects, I don't take it. I ask the doctor about it."*
>
> ***Public 18, male, 62 years old***

They also explained that they randomly search for information on "google", and compare the resources to assess the reliability of the information obtained. Unavailability of sufficient or appropriate Arabic resource led them to translate and/or compare the Arabic information with other English electronic resources.

> *"When I search for medical information I look for more than one resource. If the information is consistent in multiple resources than I assume that it is right; otherwise I don't rely on it, …, I search from Google, but I prefer Arabic because I am not much familiar with the English medical terms. I sometimes use the English resources for comparisons. I translate them using Google Translate."*
>
> ***Public 17, male, 33 years old***

A member of the public explained that he prefers to access for health information from a professional social media as the information provided is presented in a convenient approach for the public.

> *"The most resource I follow is in a Facebook by a site called "every day a health information", it is a reliable site as I think and all its information are reasonable. This site is on Facebook, YouTube and Instagram, but I follow them more at Facebook while I am viewing or reading the news you find them offering a new health information, and what is nice about them that they do not present them as long articles, no, all the information takes only few seconds from you, it is illustrated sentences, which makes you like it."*
>
> ***Public 1, male, 28 years old***

Both the public and healthcare professionals identified the need for the use of the media or social media, they believed that it could have a better outcome. This identified the need to review the current strategies used for health education.

2.3.2 Education and health literacy

Some member of the public believed that any layperson can't self-manage their condition and purchase an OTC from the pharmacy without having some sort of knowledge about the medicine they are going to use. Although lay people can be educated to improve their health literacy, a public participant believed that only individual with background on medical education can handle their minor symptoms without consulting the doctors.

> *"It depends on the person, maybe this person studied nursing, he/she know his condition and how to evaluate it, and therefore get the medicines from the pharmacy, I observed this attitude when I am in the pharmacy collecting my medicines, a person entered the pharmacy: I want this and this., and just pay, he knows what he wants, definitely he has background knowledge, maybe he studied nursing."*
>
> ***Public 04, male, 30 years old***

There were varied opinions about how the education level of the patient helped in the health communication. Some of the healthcare professionals identified that having an educated young generation helped to improve the people's ability in managing their condition. They explained that educated people are approachable when discussing with them the treatment decision.

> *"In {Health Centre} it is not that busy, here is more, few educated people here I think. They should know that they don't need to see the doctor every time."*
>
> ***HC Ph. 22, female***

> *"People were not aware, but education only, because they have been educated, education is making so much of differences there in the society due to education, both girls and the boys, they are all getting educated and that is definitely creating the differences and change, they know but previously it is not like that, previously they just take and they don't know."*
>
> ***Private GP 30, female***

Conversely, other healthcare professionals found that sometimes it is hard to deal with the educated patient. Some doctors indicated that it is hard sometimes to explain to the patient that the information patient read or the treatment he is expecting is not relevant to his case. healthcare professionals identified that people are changing; their education is advanced compared to the older generation. However, they explained that some individuals lack the ability to interpret information appropriately, and therefore could have negative impact on patient and doctor relationship when patients incorrectly processing the information he obtained online. This highlighted the need for providing a source of reliable and understandable information to support patients in self care of minor ailments. Some doctors working in the public health sector explained that the current available health information does not fulfil the need for exercising self care of minor ailments.

> *"Different bodies should be involved; most of this generation is educated, rarely do you see someone not educated because present generation is after the 70s, so most of them are already educated. But the problem is they don't have enough information about the health condition, so although they are educated they are not looking for health knowledge, just they have a general knowledge. We don't also have programmes in media for public awareness on minor conditions; most of the medical awareness programmes available are of cancer, heart disease, urine disease, not focusing on simple conditions."*
>
> ***HC GP 8, female***

Poor health literacy could influence how people process the obtained information to make an appropriate and safe decision. A community pharmacist also explained that reports of a labelling error on a paracetamol pack and releasing product recall via the media resulted in people avoiding buying the product, assuming it could harm the child.

> *"Panadol® syrup was stopped for sometimes because of error in Arabic instruction, and after that, people are not given importance for this syrup or showing interest even there was no problem in the product only in the Arabic label, and not in the medicine; they don't show interest in it and go for other products, it was stopped for sometimes, you know, and it's affecting the sale of the product. Sometimes we explain to them it's only the label in Arabic not the product itself and some of them accept and some do not."*
>
> ***Community Ph. 24, female***

3 Discussion

3.1 Organisational setting and practice

Self care cannot be effectively promoted as integral part in the primary healthcare system without an explicit policy and strategy. The findings of this study have shown organisational setting and practice is one of the important factors to promote and support patients to self care. It also has shown that variation in the practice between the two health sectors result in some people, in some occasions, have a preference to access private healthcare services, regardless of being medically insured. While some participants acknowledged the quality of the care in the public health sector, they justified the utilisation of private sector for getting fast access to desired treatment and avoid the delays of accessing the specialised care services. They explained that fast treatment is usually easy to obtain from the private sector e.g. injection, antibiotic or advanced intervention (discussed earlier in chapter 3). The public preference of utilising the private sector could help in reducing the unnecessary load on the government sector, and it worth considering how to direct the patient to utilise the community pharmacy for advice on minor ailments, especially for those who are willing to pay out-of-pocket for fast access to advice on minor ailments.

3.1.1 Standard of care and role responsibilities

Another significant finding that needs to be addressed by the relevant organisations is to close the gap in the clinical practice between the two sectors which lead to overtreatment or over diagnosis of minor ailments in the private sectors, and consequently reflect on people's attitudes about the quality of care and hence irrational use of the health services. Lack of clinical guidelines for some conditions and poor enforcement of the existing national guidelines is one of the factors contributed to this difference in practice. In addition, the restriction applied in the public health centre formularies limited the GPs from practicing evidence-based medicine. In this study, the GPs explained that some

medicines are not available in the primary health centres and therefore patients need to be referred to a specialised polyclinic, e.g. prescribing of non-sedating antihistamine; or it is restricted to be prescribed by the family medicine physicians only, e.g. prescribing of Augmentin® preparations. A recent study exploring the prescribing and utilisation of NSAIDs in primary health centres in Oman showed that there are no guidelines or protocols for the prescribing of the NSAIDs. The study also indicated that topical NSAIDs are not available in the government formulary, and COX-2 products were classified as restricted medicines items. This was believed to limit the provision of optimum patient care.(Al-Shidhani et al. 2015) In reviewing the Oman National Formulary (ONF) for the MoH health institutions, it was found that medicines which are available as OTC in the Omani private community pharmacy are classified as restricted items in the ONF, examples are loratadine, cetirizine, and wart preparation.(ONF 2016)

3.2 Workload and demand

The health centre is perceived to operate as a walk-in centre; people can visit the health centre anytime during the working hours without the need to call the centre for an appointment. Although the receptionists usually advise the patient who does not seem to be urgent/critical cases to come in different time of the day when it is less busy, they can't send the patient back if they walked into the health centre to see the doctor. Furthermore, the receptionist is usually not sufficiently trained to assess the case if it is an emergency or not, they only have an administration role, therefore it is hard to make an appropriate decision if a patient called asking for an urgent appointment. They are only offering advice if a patient asked for better timing to see the doctor.

Shortage of workforce will continue to be a challenge in the healthcare system worldwide. Therefore, it is important to find a solution for maintaining the accessibility of the public

to the care needed at lower cost. It will be challenging for the system to function effectively with the continued increase in demand by the community, deficiency of resources and/or effective model of care. The health system in Oman still recognises the doctors as the main provider of the primary healthcare, with a limited utilisation of the other healthcare professional staff. However, the findings of this study identified that the workload of the doctors had a negative effect on the sufficiency of the consultation and patient's satisfaction. This hinders the provision of "patient-centred care", and adequate information to empower patients' role in self care and self-management of minor ailments. This situation needs to be improved as the Omani population is growing and the demand in the public health sector is experiencing ongoing pressure. Promoting the concept of self care will help in maintaining the sustainability and the accessibility of the health system. In addition, enhancing the interprofessional collaborative care could improve the delivery and quality of the primary healthcare. This is important especially in the current economic situation of the country whereas the drop in the oil price has strained the expenditure on the community services including healthcare.

The healthcare professionals clarified that there is a variation in doctors' workload among different health centres and even between doctors working in the same health centre. This variation was explained to be correlated to (i) the patient's educational level, (ii) population density in the area that the health centre is located in, (iii) the speciality title of the doctors (GP or Family Medicine), (iv) role responsibilities and tasks of the staff, or (v) functioning of an appointment system. This study highlighted the gaps to improve the system and how this may be achieved. A different approach that can be considered to control the access of the unnecessary cases to see the GP that includes, for example: reviewing the appointment system, reviewing the sick leave regulation and enhancing the interprofessional or multidisciplinary-team care.

3.2.1 Sick leave

Self-certification of absence is not commonly accepted; thus, a burden is placed on the primary healthcare doctors to issue certified sick leave to approve the individual absence from work/school. "*Sickness of sick leave*" was highlighted by the Minister of Health as it is causing a burden on the health system, and identifying a misuse behaviour of people accessing the healthcare services to obtain false sick leave.(Times of Oman 2014, WISH Qatar 2016) A recent study published in 2015 investigated the issuing of sick leave certificates in four of the health centres within one district located in the Governorate of Muscat.(A'Rashdy et al. 2015) It found that 1 in 7 consultations ended with sick leave certification; young people and males are the ones most frequently obtaining sick leave certificates; and acute respiratory tract infection was the most frequent diagnosis. The healthcare professionals believed that the need of obtaining sick leave from the doctor would not stop the people from seeing the doctor even if they advised them on self care. Communication between the relevant government departments to better address this problem and improve the system is recommended. This will help to reduce the unnecessary visit to the doctor clinics.

3.3 Information and support

Lack of health literacy and health education were identified as factors that influenced the self care of minor ailments. Patient health education was identified to be important if the patient needs to take more active role on their own health and management of their illness. Although the Ministry of Health is trying to provide the essential support to the community through health education and providing written information, it was perceived that patient is educated through the traditional approach, and not tailored to their individual needs; in other words, the information available is providing general information about a disease and/or general health topic. It does not provide information

in a way to direct or support the patient in taking a decision or promote self care. Also, most of the resources available were not related or provide adequate information on the self care of minor ailments.(MoH 2015b)

The internet was identified as one of the main source for medical information. Both the public and healthcare professionals explained that the internet was used to look for medical information. With the lack of a national website for medical information people usually tend to search randomly for information through a search engine such as "Google", that yield sources from different countries websites and sometimes in non-Arabic languages. People's inability in searching skills might lead them to look at lay health advice available online from the community forums; or at health information from websites which are not usually peer reviewed and might be poor, wrong or out-of-date.

Better patient-professional communication and provision of health education are vital components in improving self care of minor ailments. Unfortunately, most of the people interviewed did not identify the healthcare professionals as the first source of information, but they tended to consult the doctor or the pharmacy staff on information they read about on the internet e.g. on symptoms and diagnosis, or medicines information. However, a recent survey by Flaiti et al. (2014) indicated that Omani university students identified the pharmacist as the main source of information for self-medication followed by other healthcare professionals; relatives and friends; medicine labels or patient information leaflets (PIL); and lastly traditional healers. In addition, the majority indicated that the reason of self-medication is that they are familiar with the medicine as they had prior experience of using it. However, the study did not compare the attitudes of the students who are studying medical subjects (pharmacy and medicine) to those who are studying different non-medical subjects toward self-medication and sources of information. The "internet or social media" or "other" was not included as one of the options under the sources of information.

In this study, the public also identified a lack of health information provided to support them in their management of their health or medical conditions. They identified the necessity for the availability of better information channel to provide them with the information they need to make a better decision in the management of their common symptoms and conditions. They therefore indicated the need for the health authority to take the initiative to provide them with a portal for easy access to reliable information. Some showed a preference for social media, whereas others for TV or radio. Rarely people recommended getting written information i.e. leaflets. This could be because of more of the young and the educated generation find the use of social media much easier and more accessible compared to written paper materials. GP's workload and communication barriers, which were identified in this study e.g. workload, clear responsibilities and language barriers, could have contributed to people's inability to access the healthcare professionals for health information. Mass media could be a useful health information channel to promote public health and therefore can have an important role in the utilisation of health services.(Grilli et al. 2002, Brinn et al. 2010)

4 Conclusion

Theese findings of this study highlight the system barriers that strict the promotion of self care of minor ailments in Oman. It has also provided a better understanding of what need to be considered by the related departments to support the people in self care of minor ailments. The participants also suggested some of the educational intervention that they prefer for obtaining the required information to support them in self care of minor ailments. This therefore can be communicated to the responsible authority or bodies to consider when developing and delivering the materials for the public health education.

Chapter 6 Summary discussion and conclusion

1 Key findings

This research identified three conceptual levels of factors that influence the self care activities in Oman. These interrelated factors are summarised into individual factors, communication and relationships factors, and system-related factors, (see Figure 13, chapter 3). Therefore, it is important to advocate and recommend interventions at these three levels if self care of minor ailments is to be developed in the Omani healthcare system. In my view, these three main themes represent multi-layered socio-cultural and environment factors that could influence the illness behaviour of the studied context and the utilisation of the health services for the management of minor ailments, i.e. directly via individual beliefs, or indirectly by system factors. This developed framework could help in adapting a comprehensive approach to effectively address the related factors for optimising the self care of minor ailments and improve utilisation of healthcare services.

1.1 Individual factors, knowledge, and beliefs

"*Illness behaviour is a normative experience governed by cultural rules*", therefore we should expect that there could be marked cross-cultural and historical variation in how the disease is defined and coped with.(Kleinman et al. 1978) The cultural beliefs were found to shape the patient explanatory behaviour when responding to their illness. Kleinman et.al. (1978) explained that there are two models to explain the clinical phenomena: patient model and doctor model. Although the doctor model tends towards the biomedical version of understanding the illness or disease, the patient model represents their cultural belief in describing the illness. It is important for the doctor to be explicit and understand the patient model of illness/ disease for better management. This cannot be achieved without the doctor effectively communicating with the patient to

identify any discrepancies and try to solve them through negotiation and patient centered care. This was found to be lacking in the Omani health system as discussed in chapter 4. Illness behaviour is a product of culture and social structure. People build their knowledge about coping with and managing their symptoms constructed on previous experience and advice received. Individual behaviour is difficult to explain, it is a complex interaction of factors and beliefs that structure individuals action. Identifying the influencing factors could help to develop a behaviour intervention to improve patient health.

1.1.1 The public beliefs

The role of culture in the understanding of illness/disease could influence patient attitude in responding to illness. This study findings showed a major role of individual's belief in responding to minor ailments. Understanding of patient beliefs could help to predict the patient health behaviours and consequently improve their behaviours for better health outcomes and use of the health services. There are different models of health behaviours that can explain the individual predisposed characteristics and perception. Theories can be used for developing interventions designed to change behaviour and finally describes research examining the longer-term maintenance of behavioural change. (Ogden 2007)

Revisiting the behaviour models, three models were identified that could explain the self care behaviour of the studied context in this research. Namely: (i) Health Belief Model (Kirscht 1974, Rosenstock et al. 1988), (ii) Common Sense Model of Self-Regulation of Health and Illness (Leventhal et al. 2012) and (iii) Andersen's Behavioural Model of Health Services (Andersen 1995). A recent study by Porteous et al. (2015) looked at the application of Andersen's Behavioural Model of Health Services to explain people's actions in self care of minor ailments. The study concluded that this model could be relevant to understand self care behaviour as well as the use of the informal system. The aim of the study was to identify the factors influencing the self care of minor ailments for better utilisation of the primary care services. As individual beliefs were found to be one of the

main factors, it may be worth reviewing the existing health models and populate the findings in the health psychology models for better understanding of illness behaviour and for recommending future interventions. Theory-based intervention and further quantitative research on lay beliefs will help to explain the Omani public health-related behaviour in more structured models, and to develop methods to promote and measure changes.

1.1.2 Healthcare professional knowledge and attitudes

This study also identified the importance of assessing the clinical knowledge of the healthcare professionals that could have influenced people's behaviour in the management of minor ailments and the utilisation of health services, as non-evidence-based clinical practice and advice was reported during interviewing the study participants, e.g. requirement of antibiotics for the treatment of a common cold. Factors identified that could contribute to poor quality of the clinical judgement are (i) lack of training or educational programme for the health workforce to develop their professional competency, (ii) lack of clinical guidelines or enforcement of regulation to maintain a consistent and up to date clinical practice. This will be discussed further under the system-related factors.

1.2 Communication and relationship factors

Patient and healthcare professional's relationship are important in patient illness behaviour; and health providers should make their own effort to socialise and manage utilisation behaviour of the health services by the patients. Lack of effective communication between patients and the healthcare professionals had been perceived in this study to be one of the factors associated with the patient developing a coping behaviour that could not be rational in most of the cases e.g. need of injection for fast

relief of a common cold or flu symptoms. As reported by some of the study participants, the doctor who managed to have a better communication and establish a good relationship with the patient to address their concerns managed to educate the people on the appropriate management of their minor ailments and gain their satisfaction although the desired medication was not supplied e.g. an antibiotic.

In order to overcome cultural beliefs and help patients to adhere to their clinical interventions and advice, healthcare professionals need to find the discrepancies between them and the patient with regard to their expectations, understanding of the illness and expected treatment, which is identified as patient-centred care in the modern model of care. This cannot be achieved without establishing a good relationship with the patient and having effective communication during the consultation. Unfortunately, this was found to be lacking in the studied context. Identifying poor communication between the patient and the doctor was one of the reasons for not having an effective or appropriate consultation. Therefore, part of improving people's understanding of clinical realities and changing their behaviour in handling minor ailments requires establishing good relationships and better communication with patients. Although the diagnosis of the common cold and other minor ailments could be easy to differentiate and make, it is important that the doctor explores why the patient decided to consult the doctor for the presented symptoms. This could help in clearing up the patient concerns and to arrive at an agreement toward the treatment decision for the patient to understand and satisfactorily adhere to. Making the patient leave the clinic without clarifying their concerns and fears could lead the patient to not comply with the treatment and change the dosage instruction (Interview 14, an example of the antibiotic case, discussed under attitude to antibiotic section 3.4.4). Furthermore, this could cause the patient to unnecessarily return to the doctor or seek the advice of a different doctor for the same symptoms or illness that are, in most of the cases are self-limiting and could of have been managed successfully by the patient at home.

1.2.1 Barriers to patient-HCP communication

Communication is a vital component in consultations; and deficiency in health communication could lead to lack of patient trust in the treatment decision and or in complying with the medical advice given. In this study language barriers were identified to critically limit the communication between the Arabic-speaking patient and non-Arabic speaking healthcare professional. This raised concerns about the appropriateness of advice given on minor ailments, that could also extend to affect the advice provided on administration of medicines for long-term conditions, by non-Arabic speaking pharmacy profession and other healthcare professionals. In addition, having workforce from a different country and cultural background, will also raise the concern of differences in culture and could contribute to cross-cultural language barrier.

Previous studies addressed the issue of language barrier and strategies that can be used to overcome language barrier during pharmacy consultations. (Bradshaw et al., 2007, Dilworth et al., 2009, Chang et al., 2011) Although in these studies pharmacists are dealing with a small group of patients or pharmacy users that do not speak or fluently speak the country's common tongue language e.g. English. In Oman, the situation is different, whereas most of healthcare professionals working in the private sector do not speak Arabic, the common language of the country. However, this intervention can be valid and can be considered for the Omani setting, examples are: (i) recruit staff who speaks the patient's language, (ii) translate medicines label into patient's language, (iii) provide educational materials/leaflets in multiple languages that commonly used in the country, (iv) provide official interpreting and translation services to maintain patient confidentiality, (v) provide training on cross-cultural communication skills. It is worth noting that at the time of writing this study, prescribed medicines that are dispensed by the community pharmacy are rarely labeled as per the minimum labeling standard recommended in the international guideline of good pharmacy practice.(FIP 2001)

1.2.2 Self care and patient empowerment

Recognising the patient as an active partner in healthcare is important for successful treatment and effective self care. People should be empowered and supported to effectively respond to acute or minor conditions to reduce the irrational use of the health services, as people tend to attend the doctors and/or accident and emergency department to get immediate care. Educating and supporting individuals to apply some self care strategies may be sufficient to manage the condition and make a doctor's appointment for follow-up if necessary. Health communication is important to support the active patient in self care and use of OTC medicines for treating minor ailments. Patient autonomy and empowerment is a principle value in the professionalism of healthcare providers and advocated in the new model of healthcare worldwide. The patient-centered approach was found to be lacking in the primary care practice in the Omani health system, which leads to the patient management to be condition oriented rather than patient-centred, and consequently patient dissatisfaction, as was reported by some of the public interviewees. The public explained their desire to have more active role in their own health, and the doctor to spend more time to discuss their concerns and provide more health information. However, it was perceived that some of the healthcare professionals behaved in a way that made the patient accept the medical decision without providing sufficient or the right information that enables them to be involved in the clinical decision or even to gain the understanding that is required for them to adhere to their treatment plan. Some people reported that they did not know why or what the medicines were prescribed for them or even if it is a single course of treatment or if the follow-up is required. Therefore, more work has to be done to improve the concept of patient autonomy in the Omani health practice and education.

1.3 System-related factors

The access to health services were maintained for all by developing a primary healthcare service that is easy to be reached as a first point of care for all the citizens of the country. The government managed to fulfil the WHO-Alma-Ata recommendation by having an accessible and reachable primary health services.(WHO 1978) The main challenge facing the government is to provide a cost effective and high-quality healthcare services to the Omani public. Therefore, the government extended the role of the primary care sector and shifted the management of long-term, non-communicable morbidities to the primary care health clinics for better utilisation of the secondary care hospitals. However, the shortage of trained GPs and the constraints of the health budget are on-going challenges in the primary healthcare sector.(MoH 2014)

The public primary healthcare sector was designed as the gatekeeper to the required secondary or advanced healthcare intervention by visiting GPs as a referral pathway to secondary care. Hence, seeing a GP is the only route to access free clinical management or health advice by the public for any health-related concern. This caused a high and unmanageable load on the operation of the health centres that forced the government to initiate a nominal registration and visit fees which slightly helped to reduce the number of irrational visits.(MoH 2014) However, this is not a long-term-effect solution; and irrational or unnecessary visits to the health centres are still causing a substantial concern as reported by the health professionals in this study. Reviewing and addressing the system-related factors identified in this study could help in identifying more related strategies to improve the utilisation and delivery of the free healthcare services, and consequently maintain the sustainability and accessibility without compensating the quality of the services provided. The study identified system-related factors that could be a barrier in delivering an optimum patient care in the primary care sector; this could be considered by the decision makers for better delivery of patient care. The main challenges that had been identified in this study are as follows:

1.3.1 Regulations, guidelines and professional competency

System-related factors that influenced the management of minor ailments in the primary care sector need to be seriously considered by the relevant parties to improve the delivery of the healthcare services in the country. The regulation of obtaining certification for a short sick leave for a patient with minor illness to guarantee absence from work or school needs to be reviewed by the related authorities e.g. Ministry of Civil Services and/or Ministry of Manpower. The current regulation does not effectively prevent some of the individuals from abusing the certified sick leaves regulation, which raises the suggestion of the need of different regulatory interventions that help to reduce the unnecessary visits and empowering patient's self care without threaten their job security. Self certification for short absences would be one way forward.(GOV.UK undated)

Lack of national clinical guidelines and poor enforcement of regulations has had a negative impact on the delivery of healthcare services to the community. Apparent variation in the clinical practice of the physicians within one sector or between the two different sectors i.e. the private and the government, in the management of the minor illness, has influenced the health seeking behaviour of the public in a way that has contributed to misuse of the healthcare services. Over treating minor ailments has become a common practice and a "win-win situation" in some cases when the patient is satisfied to obtain their desired treatment and also for the private sector physicians who are working in for profit-heath-organisation. Lack of monitoring of the prescribing attitudes and poor documentation of dispensing practices in the private sector should be seriously considered by the health authority.(Al Shahaibi et al. 2012)

A restricted and very limited formulary rule were applied in the public primary healthcare sector as a procedure for reducing irrational prescribing by the GPs and reducing waste and unnecessary cost. Although, this helped in limiting the irrational prescribing of some medicines, it was found to limit the GPs in making effective and adequate treatment

decisions. Evidence collected indicated that the numbers of the medicines that are restricted or not available in primary care formulary are essential for the management of some of the minor ailments presented.(MoH 2009b, Al-Shidhani et al. 2015, ONF 2016) Some of the restricted items in the public primary health centres were found to be classified as over the counter in other countries. Although the patient could buy them without prescription from a private pharmacy, The MoH discourages to advice the public on self-purchase as it is against the policy of providing free healthcare for the Omani people. As a result, patients have to be referred to a secondary polyclinic to be assessed by a specialised physician to receive these medicines on free prescription in Oman e.g. treatment for allergic rhinitis. On the other side, physicians who are working in the private sector can easily prescribe most of the national formulary medicines, and therefore patients can obtain many of these medicines from the first consultation. This variation in practice and the management of minor ailments has lead the patients to question the competency of the GPs working in the public health sector and/or the appropriateness of the treatment received. This therefore needs to be reviewed to reduce the variation in clinical practice and improve evidence-based-medicine prescribing.

There is also a need to review the role responsibilities of the healthcare professionals in providing care to patients. For example, medicines counselling of some medicines was reported to be the role of the GPs, and pharmacists sometimes do not provide appropriate counselling on medicines administration assuming that the GP has already educated the patient (chapter 5, section 2.1.1). Furthermore, it may be worth considering restructuring the delivery of healthcare in the public health sector by supporting a multidisciplinary approach and improving the utilisation of the under used skills and competencies of other healthcare professionals who are available in the health centre, and allowing the GPs to see the cases that critically need medical intervention. Although in the current practice, every patient sees a nurse prior to GP consultation for taking vital measurements and patient details e.g. weight, the nurses input is very limited and nurses cannot directly refer minor ailment cases to the pharmacy to collect OTC medicines without consulting

the doctor first. There are rooms for improving the operation of the primary care sector to enhance the clinical role of the onsite community pharmacy in the management of minor ailment cases. Therefore, providing continuous professional development training; and task allocation between the multidisciplinary team who are working in the primary sector need to be taken into consideration.

The country is recruiting the healthcare workforce from different countries to overcome the shortage of a national healthcare workforce. In addition to the lack or absence of clinical guidelines and evidence-based-resources, this could have an impact on clinical practice as they have different educational background and are used to different clinical practices that do not concur with the Omani health system or regulations. Therefore, it is important for the non-national healthcare workforce to receive the required training and support to be able to apply the national guidelines and regulation in their clinical practice. Continuing Professional Development (CPD) became mandatory to renew the practice licence of the non-national healthcare workforce working in Oman. However, until this time, there is no evidence - to my knowledge - that it is strictly implemented for all the healthcare professionals to maintain their practice rights. This could be because of the scarcity of CPD events to meet the required points, as some participants highlighted their desire to have more support to improve their professional competency. It could also be due to poor enforcement of regulation, appropriateness of the training provided to meet the needs of the individual staff and their clinical practice.

Health-related educational and training organisations could have a role in developing the training needs and support for the primary healthcare professionals, including the pharmacy staff, to improve their role in supporting the public on self care and self-medication. In Oman, the number of educational institutes to provide specialised training or continuing education for the healthcare professionals is very limited. The Oman medical speciality board (OMSB) are responsible for the learning and development of the healthcare professionals in the country, (discussed earlier in chapter 1, section 3.3.5).

However, a well-structured and developed graduate training and CPD programmes are currently limited to meet the needs of the physicians working in the government health sector. There is a need for independent organisations or institutes to be able to provide the training and support for other healthcare professionals and meets the needs of those who are working in the government and private sectors.

1.3.2 Health information, health literacy, and self care

Health literacy is important to support the public understanding of their symptoms and enhance their self care role for effective and safe practice of self care. Review of literature showed that low health literacy is associated with poor health outcomes and poor utilisation of healthcare services. (DeWalt et al. 2004, Berkman et al. 2011) Consumer health-related information is an important component of responsible self-medication, and health institutions and organisations in society are responsible for facilitating this by providing adequate health communication and the necessary support to promote self care. (Parker 2006) This factor was found to be significantly lacking in the Omani health system with regards to providing health information that enabled patients to self-manage their conditions, as per the health communication barriers discussed earlier. Healthcare professionals, therefore, require identifying the consumer information needs to be addressed during a consultation or to be provided in a written format. People who were not satisfied with the health information during the consultation visit, indicated that they will use the internet in seeking for further health information for better understanding of their condition or of the medicines prescribed. This caused some to struggle with the amount of information found which is not tailored to their needs. Poor health literacy could also contribute to the participants lacking the skills to process the obtained materials and make a rational judgment; for example, the case that was reported in this study of a pharmacy customer selecting a medicine brand with a patient information leaflet that has less mentioned side effects, although the other brand has same active ingredients. Also, those who cannot differentiate between the medicine side effects and

the harmful effects and are trying to take lower dose or shorter duration believing this could help in reducing the risk of adverse effects.

Health literacy of the public and patients is important for empowerment. It is important for patients to have good health knowledge and understanding if they are to be involved in their own healthcare. Although, health literacy and patient empowerment are interlinked they are different concepts. Schulz and Nakamoto (2013) explained that it is important for patients to have both high empowerment and high health literacy for effective and safe self care behaviour. Mismatch of the two concepts could make the patient take a dangerous decision if he/she is empowered but lacking in health literacy. On the other side, highly literate patients who are lacking in empowerment may choose to be highly dependent on health professionals, for example unnecessarily utilising healthcare services for advice on self-limiting conditions. This could explain the behaviour of some study participants who would like to be more responsible for their own health but were struggling because of the lack of support they received to empower their self care attitudes, and were dissatisfied with the experience of the lack of communication between them and their physician or the pharmacist.

As the department of education and information under the Ministry of Health is responsible for the public awareness and development of the information materials for the community. The findings of this study could help them in developing new health information resources that meet patient needs. The study data showed that people lack the essential knowledge to understand the symptoms of minor ailments and the information they need to make an appropriate decision to access the health services e.g. alarm symptoms. Healthcare professionals reported that the health information leaflets produced by the Ministry of Health need to be revised and updated to support patients in self care of minor ailments.

Therefore, cooperation between the clinical staff is required to develop materials that are evidence-based and provide more information about self-medication and management of minor ailments. Although there are a lot of materials available on the Ministry of Health portal for public awareness, it was not commonly accessed by the community. This could be because there is no direct link to access these materials by the patient, therefore developing a direct link accessible for the public through search engines or develop this material into a format that can be easily disseminated via social media could help the public to access the local health information easily.

2 Strengths and limitations

This is to my knowledge the first study to explore the concept of self care of minor ailments and how it is practised in Oman. It is also the first study to provide a better understanding of individual illness behaviour and how individual beliefs influence their response in handling the symptoms and consequently the utilisation of the healthcare services in Oman. Identifying and understanding the three main interrelated factors found in this study helped in forming a conceptual model for future research and interventions to improve the practice of the pharmacists and patient care in the primary care sectors.

Qualitative exploratory research is useful to gain familiarity with a phenomenon or a setting that has not been studied clearly or precisely. This will help to provide a significant insight and understanding of the current situation and guide in developing a more precise problem or hypothesis to be studied in the future. In qualitative study, the researcher is the research tool, this usually raises the criticism of possibility of bias and subjectivity of the findings, and there is a possibility that the participant response is influenced by the identity of the researcher i.e. interviewer effect (see chapter 2: section 3.3.1). It is also criticised as lacking the effects of the generalising the findings to a wider population.

However, the approach used in this project proved to be of great value to reveal individual's own experiences and perceptions, and identify the silent factors, which I found to be beyond the researcher expectation and subjective knowledge of the external reality of the studied context. I, as a researcher, believe that this could not be achieved with quantitative method, especially as there was a scarcity of previous research done on the topic in the studied context. Furthermore, this helped to lay the groundwork for a complete research study in the future that can use more generalisable research method approach.

Interviews are highly dependable on the self-reporting of the individual's own experiences and beliefs and therefore interviewees, sometimes, can bring a biased response, by trying to illustrate good behaviour to please the interviewer. People may tend to more comfortable with sharing their experiences and attitudes that are likely to be approved by the interviewer. Healthcare professionals also tend to illustrate that the negative attitudes of other healthcare professionals while giving a positive impression of their attitude and clinical practice. Therefore it is hard sometimes to predict the honest and truthful responses of the participants in reporting their actual behaviour. Also, the study was based on recalling previous experiences of the interviewees in handling the minor ailments which is sometimes more difficult if compared with a long-term condition that has become highly attached to people's life and living experience. People tended to remember the incidents that had a high impact on their life and therefore people in this study may tend to easily remember the more severe incidence of cold rather than the mild one. It is said that people tend to remember the events that had an imprint in their life, which could be because of severity or unpleasant experience. Being aware of this, I tried to prompt different scenario for the patients and understand their response in different scenarios. This helped me to have a better understanding of the factors influencing different approaches in managing minor ailments. This is the nature of the minor ailments, which make it difficult, the severity of the conditions can vary in an individual person, and the people illustrated this during the interviews when trying to

compare their different attitudes based on the severity of a similar illness e.g. cold and flu, diarrhoea. Recruiting the participants while visiting a GP clinic or a community pharmacy for minor ailments could have overcome the recall bias, but the decision was taken to recruit the people from public places so as not to miss cases that self-manage their conditions without visiting health services.

The government provides about 80% of the healthcare services, and as per the country regulations, expatriates who are not working in the government sector are not eligible to access the free public healthcare services. Therefore, the study excluded participants who were not eligible for free government treatment as their access to treatment are limited to private sector health services and they do not have the flexibility of choosing the health services compared to the Omani-citizens. Therefore, the factors identified in this study could not reflect or be applicable to this group of people who are considered part of the Omani population.

In addition, this study engaged the opinions of three different stakeholders: public, physicians and pharmacy staff. However other stakeholders could also play a role in the practice and policy of self care in Oman and their perspectives have not been explored in this study. Examples would include nurses, health educators, policy makers, political bodies and scholars. Though two of the interviewed healthcare professions, who are working in the public health sector, were a member in primary healthcare committee at the Ministry of Health and were involved in planning and policy making. This helped in gathering preliminary understanding about the view of policymakers toward promising of self care in public health sector.

3 Implications and recommendations

In 2006 the WSMI Board adopted the "WSMI Declaration on self care and self-medication" which summarised many of the themes and concepts of self care and self-medication. It stated that a country, which fully encouraged self care, through building healthier settings, making healthy choices easier for individuals, and empowering individuals to adopt healthy behaviours, can expect to have a healthier population. For the success of self care and patient empowerment in primary care, multi-layered and interlinked interventions are more effective, which require a multilevel approach and intervention at patient, healthcare professionals and organisation level to provide a self-management support.(Mechanic 1995, Collins and Rochfort 2016) The study attempted to understand the Omani public experience in handling common minor ailments, aiming to explore the influential factors and formulate evidence-based recommendations to help the related parties in improving the delivery of better healthcare to the public with minimum waste of resources. This qualitative exploratory approach helped to have a comprehensive understanding of the current situation and identified factors that conceded a broad-range of implications and recommendations to be considered by the related stakeholders.

3.1 Implication for practice of self care

The attitude toward self care varied among the studied participants and lack of knowledge and poor understanding has influenced how the public and healthcare professionals handle minor ailments. Few members of the public identified an awareness of responsible self-medication in their own handling of minor ailments. However, almost all participants agreed a need for a source of support to empower the public to actively be responsible for their own health. Educating and motivating people to treat their own minor ailments through self care and self-medication with non-prescription medicines, will not only make people responsibly utilise the free healthcare resources, but it will also motivate and help

them to positively take up other self care behaviours, such as improving their lifestyles for prevention of chronic disease.(WSMI 2014) This however, will require the collaboration of doctors with other groups of healthcare professionals e.g. nurses, pharmacists and other allied healthcare professionals to support patient self care. Any interaction with patients should be considered as an opportunity for educating the patients and supporting them to take a more active role in their own health. It is important to consider the following recommendations to support self care in Omani healthcare practice:

- At the level of the individual belief and knowledge it is important to raise the public awareness in understanding the pathophysiology of common minor ailments, pharmacotherapy of the treatment and evidence-based management of these conditions. Public education materials on minor ailments should designed to focus on the key issues, use clear and concise language, and offer practical and directive advice on self care.

- Develop a reliable and accessible information channel in different languages that meets the requirements of the multicultural structure of the country with regards to self care of minor ailments.

- To use the media and social media as alternative approach to effectively promote self care of minor ailments and identify the pharmacy as alternative source for access for advice on minor ailments.

- Improve and standardise the healthcare professionals' knowledge about minor ailments and self care through providing clinical and practical based CPD programmes. Also, to evaluate their attitudes in responding to minor ailments in the practice.

- Implementing a multidisciplinary-team culture in the primary healthcare organisations with clear role responsibilities of each healthcare professional in patient care, and enhance the utilisation of pharmacy staff skills in advising the patient on minor ailments and medicine counselling.

- Physicians and other healthcare professionals need to identify patients as partners in the healthcare system and not only recipients, and involve them in their own healthcare decisions through emphasising the importance of effective communication, patient education and sharing of information.

3.2 Implication for policy

The health authority has made great achievements in tackling communicable diseases in the early years and has improved the health of the Omani people. Today while facing the challenge of modern disease and long-term morbidities, the health authority is working steadfastly in overcoming this challenge. National programmes and public awareness campaigns are the main channels used to raise awareness among the Omani community, for both the public and the healthcare professionals. Although the authority had achieved much in public awareness and public health, there is still a way to go in order to improve support of the public in self care and self-medication. The organisation, culture and structure should support patient empowerment and self care and enable the healthcare professionals to support patients to manage their own health. This can be achieved by considering the following recommendation related to legislation and workplace policy:

- Monitor and audit the variation in practice between the public and private health sectors by the regulatory body to improve the irrational, non-evidence based clinical practice and overtreatment of minor ailments; e.g. use of injections.

- Update and enforce the implementation of national clinical guidelines such as the prescribing of antibiotics in common cold and flu.

- Review the current regulations related to the recruitment of international health workforce particularly for Arabic language proficiency, and set a strategy to overcome the variation in the educational background and practical experience of the health workforce working in the country by improving the licensing assessment and training.

- Establish a support mechanism or strategy to urgently overcome the language barrier and poor communication between the non-Arabic speaking healthcare professionals and the Arabic-speaking patients/customer, (see section 1.2.1 in this chapter for examples of possible strategies).

- Update the national formulary to support evidence-based medicines in the management of common conditions in the public primary healthcare, and review the restrictions policy set on GPs prescribing to avoid unnecessary referral to secondary care specialists for management of minor ailments.

- Introduce further healthcare strategies to clearly recognise and emphasise the role of pharmacy staff in self care of minor ailments and other primary healthcare services.

- Establish independent organisations or institutes to provide training and support for other healthcare professionals and meets the needs of those who are working in the government and private sectors.

3.3 Implication for the pharmacy profession

Pharmacist and assistant pharmacists are educated and trained toward professionalism; they need to act professionally to be trusted by the public and provide the best quality of care to the patients. The findings of this study raised a flag about how the pharmacists and assistant pharmacists behave in providing patient care or services. Although the public participants recognised the expertise of the pharmacist in medicine knowledge, consulting the pharmacist does not meet their expectation in some situations. This was clearly explained by some of the public who had different experiences with pharmacists in different countries, indicating that the community pharmacy staff in Oman does not have the knowledge and skills to provide health advice. Failure of the community pharmacists to initiate a dialogue and communicate with the patients was one of the factors that was identified as a barrier to demonstrate the professionalism of the pharmacy staff.

Community pharmacy is still considered a convenient and accessible health service. Some participants used the pharmacy to purchase medicines that they are familiar with for self-medication or for getting general advice or assurance about their medicines or the symptoms they are experiencing until they manage to see a doctor. There is an opportunity for the community pharmacy to become a primary access source for advice and information, at least during out of hours and at convenient times for the public. Unlike other studies where cost could be a limiting factor for people when utilising the health services, this was not strongly observed as a limiting factor in this study; as people who are eligible for free government treatment seem to show a preference for paying fees and going to private services if this will make them satisfied with the service they obtain. Community pharmacy, therefore, needs to improve their practice to meet the public need.

There is a room for improvement for the pharmacy profession. The enforcement of the prescription requirements is insufficient in Omani health system, and currently community pharmacists have more access to supply a variety of prescription only medicines to the

public, which should make them more responsible in assuring the safety of the medicines they dispense. Unfortunately, with the poor labelling of medicines and pharmacist's competency and skills this could be a threat for patient or customer safety. Although in some countries they are going in a direction of advancing the pharmacist role in dispensing contraceptives and giving flu vaccinations. Prescription-only-medicines are easily obtained from the pharmacy in Oman without a prescription or appropriate assessment of safety. The pharmacist could have a major impact in patient care but this will be not advisable until they improve their practice to meet the standards of the international pharmacy profession. The pharmacy in the primary healthcare sector poorly reflects the minimum standard of professionalism in their practice as was recommended in the joint WHO/FIP International good pharmacy practice quality manual.(FIP 2012)

A strategic plan is essential to improve the competency of the pharmacy profession in primary care and needs to be considered by the government. This will be essential to meet the vision of Oman health 2050 and for pharmacy to have an effective part in the Oman health system. Community pharmacy specifically and primary care pharmacy in general could have a major role and opportunity in patient care. However, without being clear about an improvement plan, their skills will be underutilised and their roles will be unnoticed. This study has identified the training needs for the community pharmacy to improve their competency and skills. It identified the importance of reviewing the CPD training courses to meet the pharmacy needs. There is a lack of training organisations or courses to meet the needs of community pharmacy for providing a better patient care and advice on minor ailments and a feasibility study is required to improve this aspect. However, further research on investigating the quality of pharmacy education in the country and a review of the curriculum to include competency-based learning that prepares a competent workforce is needed to fullfill the Health 2050 vision of integrated and multidicilanry model of care. Thus, the main recommendations for the pharmacy professions are summarised as follows:

- Improve the basic standards of good pharmacy practice in the primary healthcare sector to assure a delivery of safe patient care e.g. medicine counselling and labelling, advising on non-prescription medicines and assure safe practice.

- The authorities and regularity body should enforce the policy of good pharmacy practice, and collaborate with the Omani Pharmaceutical Society and other related organisations to improve the competency and the standards of the pharmacy profession through need-assessment and provision of continuing training and education.

3.4 Implication for the researcher and future research

Identifying the communication barriers in this study is one step towards overcoming this issue. The findings of this research helped to understand the dynamic involved in consultation where cross-culture language is not shared. It revealed a critical deficiency in the advice and management provided by non-Arabic-speaking healthcare professionals staff, this raised a concern about the magnitude of the problem in actual practice, that could be underestimated in this study because it was based on self-reporting. These findings suggest there is a need to further explore this concept and further research is required to measure and evaluate the components of counselling and communication skills; e.g. using an observational, or/and stimulated patient methods will help in providing attitudinal interventions for improving pharmacy practice and services.

This study was only conducted in one governorate of Oman. Further studies to examine and test these factors in a broader context and with further stakeholders could be conducted to identify the impact of these factors on another governorate of the country and compare the findings with a wider population. Future study could also explore the other groups of the population, who are not eligible to the free public healthcare services,

towards self care of minor ailments. Future investigation of the regulatory bodies and policymakers' perceptions about the identified concepts is important to develop an implementation strategy particularly for improving the pharmacy practice in the country.

Individual characteristics and factors had a significant impact on individual health beliefs and illness behaviour. Health psychology research is limited in the Omani setting. Using health psychology models to further understand and predict individuals' illness behaviour is significantly important. Illness behaviour, health belief models and common-sense model could provide more details about the socio-economic factor of the studied individuals for better understanding of how these factors could influence people's health seeking behaviours. Hence these models could help predict how different individuals' representations of illness could influence their attitudes and responses to symptoms. In this study, individual and cultural beliefs were found to have an impact on the illness and health seeking behaviour. The study method used was helpful in identifying and describing this influence in self care of minor ailments. However, using the developed health psychology models or theories to further understand and predict individuals' illness behaviour is significantly important. This will be helpful to obtain more structured and comprehensive details on other individual characteristics and demographic factors using a quantitative study approach. In addition, this can be further studied in self care of long-term conditions to improve the management and adherence to the treatment of these conditions, as well as the delivery of better healthcare services patients in Oman.

4 Conclusion

This study helped to identify the factors that influenced the self care of minor ailments related to the individual knowledge and beliefs, communication and relationships, and the health system. These Interlinked factors need to be considered by the health authority and policymakers to improve self care practice and preventive care. The behaviour of seeking a quick fix and immediate recovery was observed in this study. The challenge here will be to modify the concepts and the coping behaviours toward the common cold for example. This cannot be achieved without assisting the patient beyond a traditional pattern of services, i.e. to address the environmental and cultural factors within the domain of medical care. Improving the patient-healthcare professional relationships and communication is important for patient-centred care and empowerment. It is also of importance to have strict regulation in place to implement and monitor evidence-based medicine for the management of minor ailments and reduce the variations in the clinical practice. Variations that did not only have a negative impact on the utilisation of the health services but also the over-treatment of patients by clinicians for the goal of obtaining their satisfaction and making a profit in the private sector.

The aspect of self care and self-medication is not recognised as an essential element in the Omani health system. The health system is still designed to have patients as a passive receiver of health services and treatment and still sees the aspect of self-medication as an unhealthy practice and even discourages it. With the country facing new challenges of an aging population and non-communicable-diseases that could have a significant impact on the cost of the health services provided in the coming 10 – 15 years; It is an ideal time to consider new and effective approaches to maintain the quality of the healthcare through restructuring the delivery of healthcare services by better utilisation of the skills of other healthcare professionals e.g. the pharmacist; and by empowering patient's role in self care.

References

A'Rashdy, F. Al-Hosni, K. Al-Rawahi, A. and Theodorsson, T. (2015) Trends of Sickness Certifications in Primary Health Care in Muscat, Sultanate of Oman. *Oman Medical Journal,* 30 (2)**,** 95-99.

Abasaeed, A. Vlcek, J. Abuelkhair, M. and Kubena, A. (2009) Self-medication with antibiotics by the community of Abu Dhabi Emirate, United Arab Emirates. *Journal of Infection in Developing Countries,* 3 (7)**,** 491-497.

Abdo-Rabbo, A. Al-Ansari, M. Gunn, BC. and Suleiman, BJ. (2009) The use of medicines in Oman: Public Knowledge, Attitudes and Practices. *Sultan Qaboos University Medical Journal,* 9 (2)**,** 124-131.

Abdulhadi, N. Al Shafaee, M. Freudenthal, S. Ostenson, CG. and Wahlstrom, R. (2007) Patient-provider interaction from the perspectives of type 2 diabetes patients in Muscat, Oman: a qualitative study. *BMC Health Services Research,* 7**,** 162.

Al Ameri, MN. Mohamed, W. Makramalla, E. Shalhoub, B. Tucker, A, et al. (2013) Renal patients' views on generic prescribing and substitution: example from the United Arab Emirates. *Eastern Mediterranean Health Journal,* 19 (4)**,** 373-381.

Al Bahrani, B. (2014) *Promotion to cancer control: Oman experience* [Online]. Available from: http://events.exicon-intl.com/app/webroot/js/ckfinder/userfiles/files/Cancer/Presentations/Day1/Session3/04-Bassim Bharani.pdf [Accessed 20 February 2017].

Al Shahaibi, NMS. Al Said, LS. Kini, TG. and Chitme, HR. (2012) Identifying errors in handwritten outpatient prescriptions in Oman. *Journal of Young Pharmacists* 4(4)**,** 267-272.

Al Tauqi, Z. (2012) Incidence of genetic blood diseases in Oman among highest worldwide. *Muscat Daily*, 16 October 2016.

Al-Abdullatif, A. (2014) *PhD thesis: the provision of pharmaceutical care in oman: practice and perceived facilitators and barriers to implementation.* University of Toronto.

Al-Amer, R. Ramjan, L. Glew, P. Darwish, M. and Salamonson, Y. (2016) Language translation challenges with Arabic speakers participating in qualitative research studies. *International Journal of Nursing Studies,* 54**,** 150-157.

Al-Arifi, MN. (2012) Patients' perception, views and satisfaction with pharmacists' role as health care provider in community pharmacy setting at Riyadh, Saudi Arabia. *Saudi Pharmaceutical Journal,* 20 (4)**,** 323-330.

Al-lamki, SM. (2000) *Omanization: a three tier strategic framework for human resource management and training in the Sultanate of Oman* [Online]. Journal of Comparative International Management. Available from: https://journals.lib.unb.ca/index.php/JCIM/article/view/462/771 [Accessed 10 March 2017].

Al-Madouj, AN. Eldali, A. and Al-Zahrani, AS. (2011) *GCC report: Ten-year cancer incidence among nationals of the GCC states 1998 - 2007* [Online]. Available from: http://www.moh.gov.bh/Content/Files/Publications/GCC Cancer Incidence 2011.pdf [Accessed 20 November 2013].

Al-Mandhari, A. Al-Adawi, S. Al-Zakwani, I. Al-Shafaee, M. and Eloul, L. (2008) Impact of geographical proximity on health care seeking behaviour in northern oman. *Sultan Qaboos University Medical Journal,* 8 (3)**,** 310-318.

Al-Mandhari, A. Al-Adawi, S. Al-Zakwani, I. Al-Shafaee, M. and Eloul, L. (2009) Relatives' advice and health care-seeking behaviour in oman. *Sultan Qaboos University Medical Journal,* 9 (3)**,** 264-271.

Al-Mandhari, A. Al-Adawi, S. Al-Zakwani, I. Dorvlo, A. and Al-Shafaee, M. (2013) Reasons for Consultation among Patients attending Primary Healthcare Centres in Oman. *Sultan Qaboos University Medical Journal,* 13 (2)**,** 248.

Al-Riyami, A. (2012) Health Vision 2050 Oman: A Committed Step towards Reforms. *Oman Medical Journal,* 27 (3)**,** 190-191.

Al-Shidhani, A. Al-Rawahi, N. and Al-Rawahi, A. (2015) Non-steroidal anti-inflammatory drugs (NSAIDs) use in primary health care centers in A'Seeb, Muscat: A clinical audit. *Oman Medical Journal,* 30 (5)**,** 366-371.

Albadr, Y. and Khan, TM. (2015) Factors influencing community pharmacist decision to dispense generic or branded medicines; Eastern Province, Alahsa, Saudi Arabia. *Saudi Pharmaceutical Journal,* 23 (2)**,** 143-146.

Alghasham, AA. (2009) Generic drug prescribing in central Saudi Arabia: perceptions and attitudes of physicians. *Annals of Saudi Medicine,* 29 (1)**,** 24-29.

Allan, GM. and Arroll, B. (2014) Prevention and treatment of the common cold: making sense of the evidence. *Canadian Medical Association Journal,* 186 (3)**,** 190-199.

Alshishtawy, MM. (2010) Four Decades of Progress: Evaluation of the health system in Oman. *Sultan Qaboos University Medical Journal,* 10**,** 12-22.

Andersen, RM. (1995) Revisiting the behavioral model and access to medical care: does it matter? *Journal of Health and Social Behavior,* 36 (1)**,** 1-10.

Anderson, C. (1998) Health promotion by community pharmacists: Consumers' views. *International Journal of Pharmacy Practice,* 6 (1)**,** 2-12.

Anderson, C. Blenkinsopp, A. and Armstrong, M. (2004) Feedback from community pharmacy users on the contribution of community pharmacy to improving the public's health: a systematic review of the peer reviewed and non-peer reviewed literature 1990–2002. *Health Expectations,* 7 (3)**,** 191-202.

Anderson, C. and Thornley, T. (2014) "It's easier in pharmacy": why some patients prefer to pay for flu jabs rather than use the National Health Service. *BMC Health Services Research,* 14 (35)**,** 1-6.

Anon. (2016) *Code of research conduct and research ethics* [Online]. UK: University of Nottingham. Available from: http://www.nottingham.ac.uk/educationstudentintranet/resources/research/code-of-research-conduct-and-research-ethics-version-6-2016.pdf [Accessed 1 May 2017].

Arya, V. Pinto, S. and Singer, J. (2013) Understanding awareness of pharmacist-led medication therapy management among primary care physicians in New York City, Part II: Findings and implications. *The Journal of Medical Practice Management,* 29 (3)**,** 187-194.

Awad, AI. and Aboud, EA. (2015) Knowledge, attitude and practice towards antibiotic use among the public in Kuwait. *PLoS One,* 10 (2)**,** e0117910.

Awaisu, A. Kheir, N. Ibrahim, MI. El-Hajj, M. Hazi, H, et al. (2014) Knowledge, attitudes, and practices of community pharmacists on generic medicines in Qatar. *International Journal of Clinical Pharmacy,* 36 (2)**,** 394-404.

Babar, ZU. Kan, SW. and Scahill, S. (2014) Interventions promoting the acceptance and uptake of generic medicines: a narrative review of the literature. *Health Policy,* 117 (3)**,** 285-296.

Balkhy, HH. Assiri, AM. Mousa, HA. Al-Abri, SS. Al-Katheeri, H, et al. (2016) The strategic plan for combating antimicrobial resistance in Gulf Cooperation Council States. *Journal of Infection and Public Health,* 9 (4)**,** 375-385.

Barbour, R. (2013) *Introducing qualitative research: a student's guide.* 2nd ed. Thousand Oaks: Sage.

Bawazir, SA. (2004) Consumer attitudes towards community pharmacy services in Saudi Arabia. *International Journal of Pharmacy Practice,* 12 (2)**,** 83-89.

Bazeley, P. (2013) *Qualitative data analysis: practical strategies.* 1st ed. Thousand Oaks: Sage.

Belfrage, C. and Hauf, F. (2016) The Gentle Art of Retroduction: Critical Realism, Cultural Political Economy and Critical Grounded Theory. *Organization Studies,* 38 (2)**,** 251-271.

Belkina, T. Al Warafi, A. Hussein Eltom, E. Tadjieva, N. Kubena, A, et al. (2014) Antibiotic use and knowledge in the community of Yemen, Saudi Arabia, and Uzbekistan. *Journal of Infection in Developing Countries,* 8 (4)**,** 424-429.

Benton, T. and Craib, I. (2010) *Philosophy of social science: The philosophical foundations of social thought.* 2nd ed. UK: Palgrave Macmillan.

Blenkinsopp, A. and Bradley, C. (1996) Patients, society, and the increase in self medication. *British Medical Journal,* 312 (7031)**,** 629-632.

Bojke, C. Gravelle, H. Hassell, K. and Whittington, Z. (2004) Increasing patient choice in primary care: the management of minor ailments. *Health Economics,* 13 (1)**,** 73-86.

Bradley, CP. Riaz, A. Tobias, RS. Kenkre, JE. and Dassu, DY. (1998) Patient attitudes to over-the-counter drugs and possible professional responses to self-medication. *Family Practice,* 15 (1)**,** 44-50.

Bradshaw, M. Tomany-Korman, S. and Flores, G. (2007) Language barriers to prescriptions for patients with limited English proficiency: a survey of pharmacies. *Pediatrics,* 120 (2)**,** e225-235.

Brata, C. Gudka, S. Schneider, CR. and Clifford, RM. (2015) A review of the provision of appropriate advice by pharmacy staff for self-medication in developing countries. *Research in Social and Administrative Pharmacy,* 11 (2)**,** 136-153.

Brata, C. Gudka, S. Schneider, CR. Everett, A. Fisher, C, et al. (2013) A review of the information-gathering process for the provision of medicines for self-medication via community pharmacies in developing countries. *Research in Social and Administrative Pharmacy,* 9 (4)**,** 370-383.

Braunack-Mayer, A. and Avery, JC. (2009) Before the consultation: why people do (or do not) go to the doctor. *The British Journal of General Practice,* 59 (564)**,** 478-479.

Brinn, M. Carson, K. Esterman, A. Chang, A. and Smith, B. (2010) Mass media interventions for preventing smoking in young people (review). *Cochrane Database of Systematic Reviews,* (11).

Bryant, A. and Charmaz, K (eds.) (2007). *The Sage handbook of grounded theory,* Thousand Oaks: Sage.

Bryman, A. (2004) *Social research methods.* 5th ed. Oxford: Oxford University Press.

Cantrill, J. Morris, C. and Weiss, M. (2006) How patients perceive minor illness and factors influencing seeing a doctor. *Primary Health Care Research and Development,* 7 (2)**,** 157-164.

Cardol, M. Schellevis, F. Spreeuwenberg, P. and Lisdonk, E. (2005) Changes in patients' attitudes towards the management of minor ailments. *British Journal of General Practice,* 55**,** 516 - 521.

Chang, E. Tsang, B. and Thornley, S. (2011) Language barriers in the community pharmacy: a survey of northern and western Auckland. *Journal of Primary Health Care,* 3 (2)**,** 102-106.

Charmaz, K. (2005) Grounded Theory in the 21st Century: Applications for Advancing Social Justice. *In:* Denzin, NK and Lincoln, YS (eds.) *The Sage handbook of qualitative research.* Thousand Oaks: Sage.

Charmaz, K. (2006) *Constructing grounded theory: A practical guide through qualitative analysis.* 1st ed. Thousand Oaks: Sage.

Charmaz, K. (2014) *Constructing grounded theory.* 2nd ed. Thousand Oaks: Sage.

Chowdhury, AA. Roy, T. Faroque, A. Bachar, SC. Asaduzzaman, M, et al. (2011) A comprehensive situation assessment of injection practices in primary health care hospitals in Bangladesh. *BMC Public Health,* 11 (1)**,** 1.

Collins, C. and Rochfort, A. (2016) *Promoting Self-Management and Patient Empowerment in Primary Care* [Online]. Rijeka: InTech. Available from: https://cdn.intechopen.com/pdfs-wm/50047.pdf [Accessed 30 October 2016].

Conrad, P. and Barker, KK. (2010) The social construction of illness: key insights and policy implications. *Journal of Health and Social Behavior,* 51 (S)**,** S67-S79.

Corbally, MA. and Gallagher, P. (2006) Accessible yet not accessed? A literature review exploring factors which may prevent patients taking over the counter analgesia prior to attending Accident and Emergency. *Accident and Emergency Nursing,* 14 (2)**,** 78-82.

Coyne, IT. (1997) Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries? *Journal of Advanced Nursing,* 26 (3)**,** 623-630.

Creswell, JW. (2014) *Research design: qualitative, quantitative, and mixed method approach.* 4th ed. Thousand Oaks: Sage.

Cruickshank, J. (2012) Positioning positivism, critical realism and social constructionism in the health sciences: a philosophical orientation. *Nursing Inquiry,* 19 (1)**,** 71-82.

Department of Health (DH). (2000) Pharmacy in the future: Implementing the NHS plan. London: DH.

Department of Health (DH). (2003) A vision for pharmacy in the new NHS. London: DH.

Department of Health (DH). (2005) Self care - a real choice: self care support - a practical option. London: DH.

Department of Health (DH). (2008) Pharmacy in England: building on strength - delivering the future. London: DH.

Dilworth, TJ. Mott, D. and Young, H. (2009) Pharmacists' communication with Spanish-speaking patients: a review of the literature to establish an agenda for future research. *Research in Social and Administrative Pharmacy,* 5 (2)**,** 108-120.

Directorate General of Pharmaceutical Affairs and Drug Control (DGPA&DC). (2000) *Oman national drug policy* [Online]. Oman: MoH. Available from: http://apps.who.int/medicinedocs/documents/s17793en/s17793en.pdf [Accessed 10 November 2013].

Directorate General of Pharmaceutical Affairs and Drug Control (DGPA&DC). (undated) *Requirment and procedures for licensing of pharmacist and assisstant pharmacist.* [Online]. Oman: MoH. Available from: https://www.moh.gov.om/documents/16539/1237174/Requirements+%26+Procedure+for++licensing+of+Ph.+%26++Asst.+Ph..pdf/a9fc91e1-ad2d-40c0-aaac-a2b0470413db [Accessed 15 February 2017].

Directorate of Rational Use of Medicines (DRUM). (2009) *Houshold Survey on Medicine Use in Oman* [Online]. Oman: WHO/EMRO. Available from: http://apps.who.int/medicinedocs/documents/s17055e/s17055e.pdf [Accessed 15 Feburary 2014].

Dunne, SS. and Dunne, CP. (2015) What do people really think of generic medicines? A systematic review and critical appraisal of literature on stakeholder perceptions of generic drugs. *BMC Medicine,* 13 (173)**,** 1-27.

Eades, CE. Ferguson, JS. and O'Carroll, RE. (2011) Public health in community pharmacy: a systematic review of pharmacist and consumer views. *BMC Public Health,* 11 (582)**,** 1-13.

Eakin, J. Robertson, A. Poland, B. Coburn, D. and Edwards, R. (1996) Towards a critical social science perspective on health promotion research. *Health Promotion International,* 11 (2)**,** 157-165.

El Hajj, MS. Salem, S. and Mansoor, H. (2011) Public's attitudes towards community pharmacy in Qatar: a pilot study. *Patient Preference and Adherence,* 5**,** 405-422.

Elliott, A. McAteer, A. and Hannaford, P. (2011) Revisiting the symptom iceberg in today's primary care: results from a UK population survey. *BMC Family Practice,* 12 (1)**,** 1-11.

Elliott, AM. McAteer, A. and Hannaford, PC. (2012) Incongruous consultation behaviour: results from a UK-wide population survey. *BMC Family Practice,* 13 (21)**,** 1-15.

Elwood, SA. and Martin, DG. (2000) "Placing" Interviews: Location and Scales of Power in Qualitative Research. *The Professional Geographer,* 52 (4)**,** 649-657.

Ethnologue. (2015) *Language of Oman: An Ethnologue Country Report* [Online]. Ethnologue: langugae of the world. Available from: https://www.ethnologue.com/country/OM/status [Accessed 25 November 2016].

Flaiti, MA. Badi, KA. Hakami, WO. and Khan, SA. (2014) Evaluation of self-medication practices in acute diseases among university students in Oman. *Journal of Acute Disease,* 3 (3)**,** 249-252.

Gidman, W. and Cowley, J. (2013) A qualitative exploration of opinions on the community pharmacists' role amongst the general public in Scotland. *The International Journal of Pharmacy Practice,* 21 (5)**,** 288-296.

Given, LM. (2008) *The Sage encyclopedia of qualitative research methods.* Thousand Oaks: Sage.

Golafshani, N. (2003) Understanding reliability and validity in qualitative research. *The Qualitative Report,* 8 (4)**,** 597-606.

Grilli, R. Ramsay, C. and Minozzi, S. (2002) Mass media interventions: effects on health services utilisation. *Cochrane Database of Systematic Reviews,* (1).

Gualano, MR. Gili, R. Scaioli, G. Bert, F. and Siliquini, R. (2015) General population's knowledge and attitudes about antibiotics: a systematic review and meta-analysis. *Pharmacoepidemiology and Drug Safety,* 24 (1)**,** 2-10.

Gulf Health Council. (2014) *Pharmaceutical care* [Online]. GCC Health Council Available from: http://sgh.org.sa/en-us/technicalprograms/healthcare/pharmaceuticalcare.aspx [Accessed 10 March 2014].

Gulliford, M. Morgan, M. Hughes, D. Beech, R. Figeroa-Munoz, J, et al. (2001) *Access to Health Care:Report of a Scoping Exercise for the National Co-ordinating Centre for NHS Service Delivery and Organisation R & D (NCCSDO)* [Online]. London: King's College. Available from: http://www.nets.nihr.ac.uk/__data/assets/pdf_file/0020/64325/FR-08-1009-005.pdf [Accessed 1 March 2014].

Hammersley, M. (1990) *Dilemma of Qualitative Method.* USA: Routledge.

Hasan, S. Stewart, K. Chapman, CB. Hasan, MY. and Kong, DC. (2014) Physicians' attitudes towards provision of primary care services in community pharmacy in the United Arab Emirates. *International Journal of Pharmacy Practice,* 23 (4)**,** 274-282.

Hassali, MA. Shafie, AA. Jamshed, S. Ibrahim, MI. and Awaisu, A. (2009) Consumers' views on generic medicines: a review of the literature. *International Journal of Pharmacy Practice,* 17 (2)**,** 79-88.

Hassell, K. Noyce, PR. Rogers, A. Harris, J. and Wilkinson, J. (1997) A pathway to the GP: The pharmaceutical 'consultation' as a first port of call in primary health care. *Family Practice,* 14 (6)**,** 498-502.

Hassell, K. Rogers, A. and Noyce, P. (2000) Community pharmacy as a primary health and self-care resource: A framework for understanding pharmacy utilization. *Health and Social Care in the Community,* 8 (1)**,** 40-49.

Hauf, F. (2016) Chapter 3: towards Critical Grounded Theory. *Beyond decent work: the cultural political economy of labour struggles in Indonesia.* Frankfurt: Campus.

Higher College of Technology (HCT). (2016) *Assistant pharmacy diploma course book* [Online]. Oman: HCT. Available from: http://www.hct.edu.om/pdf/pharmacy/course-book.pdf [Accessed 15 February 2017].

Hughes, CM. and McCann, S. (2003) Perceived interprofessional barriers between community pharmacists and general practitioners: a qualitative assessment. *The British Journal of General Practice,* 53 (493)**,** 600.

Hughes, D. Myles, S. Longo, M. Lisles, C. and Hood, K. (2007) Factors influencing user choices to visit either general practitioners or community pharmacists for minor ailments - A discrete choice experiment. *Value in Health,* 10 (3)**,** A23-A23.

Im, EO. Kim, S. Tsai, HM. Nishigaki, M. Yeo, SA, et al. (2016) Practical issues in multi-lingual research. *International Journal of Nursing Studies,* 54**,** 141-149.

International Pharmaceutical Federation (FIP). (1996) *Statement of principle self-care including self-medication: the professional role of teh pharmacist* [Online]. The Hague, The Netherlands: FIP. Available from: https://www.fip.org/www/uploads/database_file.php?id=204&table_id= [Accessed 1 April 2017].

International Pharmaceutical Federation (FIP). (2001) *FIP Guidelines for the labels of prescribed medicines* [Online]. The Hague, The Netherlands: FIP. Available from: http://apps.who.int/medicinedocs/documents/s19759en/s19759en.pdf [Accessed 30 March 2017].

International Pharmaceutical Federation (FIP). (2012) *Joint FIP/WHO guidelines on good pharmacy practice: standards for quality of pharmacy services.* [Online]. The Hague, The Netherlands: FIP. Available from: http://www.fip.org/www/uploads/database_file.php?id=331&table_id= [Accessed 20 March 2017].

International Pharmaceutical Federation (FIP). (2017) *Pharmacy as a gateway to care: Helping people towards better health* [Online]. The Hague, The Netherlands: FIP. Available from: http://fip.org/files/fip/publications/2017-04-Pharmacy-Gateway-Care.pdf [Accessed 27 April 2017].

International Pharmaceutical Federation (FIP) and The World Self-Medication Industry (WSMI). (1998) *Responsible self-medication: joint statment by the International Pharmaceutical Federation (FIP) and The World Self Medication Industry (WSMI)* [Online]. The Hague, The Netherlands: FIP. Available from: https://www.fip.org/www/uploads/database_file.php?id=241&table_id= [Accessed 1 April 2017].

Jaffer, B. (2007) *National approach to promote rational use of medicines: the Omani Experience* [Online]. World Health Asmbely, Geneva: WHO Available from: http://www.who.int/drugresistance/OmanDRDUforWHAMeetingGeneva.pdf [Accessed 25 April 2014].

Janjua, NZ. Hutin, YJ. Akhtar, S. and Ahmad, K. (2006) Population beliefs about the efficacy of injections in Pakistan's Sindh province. *Public Health,* 120 (9)**,** 824-833.

Jose, J. Al Shukili, MN. and Jimmy, B. (2015) Public's perception and satisfaction on the roles and services provided by pharmacists – Cross sectional survey in Sultanate of Oman. *Saudi Pharmaceutical Journal,* 23 (6)**,** 635-641.

Jose, J. Jimmy, B. Alsabahi, AG. and Al Sabei, GA. (2013) A study assessing public knowledge, belief and behavior of antibiotic use in an omani population. *Oman Medical Journal,* 28 (5)**,** 324-330.

Jurgens, CY. Hoke, L. Byrnes, J. and Riegel, B. (2009) Why do elders delay responding to heart failure symptoms? *Nursing Research,* 58 (4)**,** 274-282.

Kaplan, WA. Ritz, LS. Vitello, M. and Wirtz, VJ. (2012) Policies to promote use of generic medicines in low and middle income countries: a review of published literature, 2000-2010. *Health Policy,* 106 (3)**,** 211-224.

Kashgary, AD. (2011) The paradox of translating the untranslatable: Equivalence vs. non-equivalence in translating from Arabic into English. *Journal of King Saud University - Languages and Translation,* 23 (1)**,** 47-57.

Kelly, DV. Young, S. Phillips, L. and Clark, D. (2014) Patient attitudes regarding the role of the pharmacist and interest in expanded pharmacist services. *Canadian Pharmacists Journal,* 147 (4)**,** 239-247.

Kelly, M. Sahm, LJ. Shiely, F. O'Sullivan, R. McGillicuddy, A, et al. (2016) Parental knowledge, attitudes and beliefs regarding fever in children: an interview study. *BMC Public Health,* 16**,** 540.

Kennedy, TJ. and Lingard, LA. (2006) Making sense of grounded theory in medical education. *Medical Education,* 40 (2)**,** 101-108.

Kheir, N. Al Saad, D. and Al Naimi, S. (2013) Pharmaceutical care in the Arabic-speaking Middle East: literature review and country informant feedback. *Avicenna,* 2**,** 1-9.

Kirscht, JP. (1974) The health belief model and illness behavior. *Health Education Monographs,* 2 (4)**,** 387-408.

Kleinman, A. Eisenberg, L. and Good, B. (1978) Culture, illness, and care: clinical lessons from anthropologic and cross-cultural research. *Annals of Internal Medicine,* 88 (2)**,** 251-258.

Krauss, SE. (2005) Research paradigms and meaning making: A primer. *The Qualitative Report,* 10 (4)**,** 758-770.

Leventhal, H. Bodnar-Deren, S. Breland, JY. Hash-COnverse, J. Phillips, LA, et al. (2012) Modelling health and illness behaviour: the approach of the commonsense model. *In:* Baum;, A, et al. (eds.) *Handbook of health psychology.* 2nd ed. London: psychology press.

Leventhal, H. Leventhal, E. and Contrada, R. (1998) Self-regulation, health and behavior: A perceptual-cognitive approach. *Psychology and Health,* 13**,** 717 - 733.

Leyva-Flores, R. Kageyama, ML. and Erviti-Erice, J. (2001) How people respond to illness in Mexico: self-care or medical care? *Health Policy,* 57 (1)**,** 15-26.

Lonnroth, K. Tran, TU. Thuong, LM. Quy, HT. and Diwan, V. (2001) Can I afford free treatment?: Perceived consequences of health care provider choices among people with tuberculosis in Ho Chi Minh City, Vietnam. *Social Science and Medicine,* 52 (6)**,** 935-948.

Maphil. (2011) *Physical location map of Oman, highlighted continent* [Online]. Available from: http://www.maphill.com/oman/location-maps/physical-map/highlighted-continent/ [Accessed 28 December 2016].

Mason, J. (2002) *Qualitative researching.* Thousand Oaks: Sage.

Mays, N. and Pope, C. (2000) Assessing quality in qualitative research. *British Medical Journal,* 320 (7226)**,** 50-52.

McLaws, ML. Ghahramani, S. Palenik, CJ. Keshtkar, V. and Askarian, M. (2014) Assessment of injection practice in primary health care facilities of Shiraz, Iran. *American Journal of Infection Control,* 42 (3)**,** 300-304.

Mechanic, D. (1995) Sociological dimensions of illness behavior. *Social Science and Medicine,* 41 (9)**,** 1207-1216.

Ministry of Health (MoH). (2009a) *Cancer incidence in Oman* [Online]. Oman: MoH. Available from: http://www.moh.gov.om/en/reports/CancerIncidenceinOman2009.pdf [Accessed 20 November 2013].

Ministry of Health (MoH). (2009b) *Oman approved drug list* [Online]. Oman: WHO. Available from: http://apps.who.int/medicinedocs/documents/s19777en/s19777en.pdf [Accessed 29 March 2017].

Ministry of Health (MoH). (2011) *The 8th Five Year Plan for Health Development.* [Online]. Oman: MoH. Available from: http://www.nationalplanningcycles.org/sites/default/files/country_docs/Oman/five_year_plan_for_health_development_2011-2015.pdf. [Accessed 20 January 2014].

Ministry of Health (MoH). (2014) *Health vision 2050: the main documents* [Online]. Oman: MoH. Available from: https://www.moh.gov.om/documents/16506/119833/Health+Vision+2050/7b6f40f3-8f93-4397-9fde-34e04026b829 [Accessed 14 February 2017].

Ministry of Health (MoH). (2015a) *Annual health report* [Online]. Sultanate of Oman: MoH. Available from: https://www.moh.gov.om/en_US/web/statistics/annual-reports [Accessed 14 January 2017].

Ministry of Health (MoH). (2015b) *Health Education eLibrary* [Online]. Oman: MoH. Available from: https://www.moh.gov.om/en/web/department-of-health-education-information/elibrary [Accessed 27 January 2017].

Ministry of Health (MoH). (2016a) *Health Ministry Launches National Campaign on AMR* [Online]. Oman: MoH. Available from: https://www.moh.gov.om/en/-/---236 [Accessed 5 November 2016].

Ministry of Health (MoH). (2016b) *The national strategic plan: the 9th five-year plan for the health development (2016-2020)* [Online]. Oman MoH. Available from: https://www.moh.gov.om/en_US/web/directorate-general-of-planning/resources [Accessed 20 April 2017].

Morris, CJ. Cantrill, JA. and Weiss, MC. (2001) GPs' attitudes to minor ailments. *Family Practice,* 18 (6)**,** 581-585.

Morris, CJ. Cantrill, JA. and Weiss, MC. (2006) Minor ailment consultations: a mismatch of perceptions between patients and GPs. *Primary Health Care Research & Development,* 4 (4)**,** 365-370.

Mullings, B. (1999) Insider or outsider, both or neither: some dilemmas of interviewing in a cross-cultural setting. *Geoforum,* 30 (4)**,** 337-350.

National Center for Statistics and Information (NCSI). (2015) *Population Statistics Bulletin* [Online]. Oman: NCSI. Available from: https://www.ncsi.gov.om/Elibrary/LibraryContentDoc/bar_pouplation 2015_0ee0da19-f559-4957-a6df-815ccbc7286b.pdf [Accessed 24 November 2016].

National Center for Statistics and Information (NCSI). (2016) *Statistical year book* [Online]. Oman: NCSI. Available from: https://www.ncsi.gov.om/Elibrary/LibraryContentDoc/bar_Statistical Year Book 2016_6f43e0e6-592a-43a1-b1b6-82c32c046aa9.pdf [Accessed 28 December 2016].

NHS Choices. (2015) *The NHS in England: NHS services explained* [Online]. UK. Available from: http://www.nhs.uk/NHSEngland/AboutNHSservices/Pages/NHSServices.aspx [Accessed 1 April 2017].

NHS England. (2016) *General Practice Forward View* [Online]. UK: NHS England. Available from: https://www.england.nhs.uk/wp-content/uploads/2016/04/gpfv.pdf [Accessed 17 April 2017].

NICE Clinical Knowledge Summaries (CKS). (2016) *Malaria: diagnosis* [Online]. National Institute for Health and Care Exellence (NICE). Available from: https://cks.nice.org.uk/malaria -!diagnosissub:1 [Accessed 16 December 2016].

Norman, KD. and Yvonna, SL. (2013) *Strategies of Qualitative Inquiry.* 4th ed. Thousand Oaks Sage.

Office for National Statistics (ONS). (2013) *Population Estimates for UK, England and Wales, Scotland and Northern Ireland, Mid 2011 and Mid-2012* [Online]. UK: ONS. Available from: http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-uk--england-and-wales--scotland-and-northern-ireland/mid-2011-and-mid-2012/index.html [Accessed 12 October 2013].

Ogden, J. (2007) *Health psychology: a textbook.* 4th ed. Berkshire, UK: Open University Press.

Oliver, C. (2012) Critical Realist Grounded Theory: A New Approach for Social Work Research. *The British Journal of Social Work,* 42 (2)**,** 371-387.

Oman Medical College (OMC). (2015) *Pharmacy program* [Online]. Oman: OMC. Available from: http://www.omc.edu.om/Bowshar/Pharmacy_Program.html [Accessed 15 February 2017].

Oman Medical Specialty Board (OMSB). (2017) *Continuing professional development* [Online]. Oman: OMSB. Available from: http://www.omsb.org/infoPage.aspx?id=262 [Accessed 15 February 2017].

Oman National Formulary (ONF). (2016) *Oman national formulary for Ministry of Health institutions* [Online]. Oman: MoH. Available from: https://www.moh.gov.om/documents/16569/0/ONF+2016+-for+E+Health+Portal.pdf/3f224743-563e-4640-85c1-fe46abe3db93 [Accessed 29 March 2017].

Oxford Business Group. (2015) The report: Oman 2015. UK: Oxford Business Group.

Patel, A. Gauld, R. Norris, P. and Rades, T. (2009) "This body does not want free medicines": South African consumer perceptions of drug quality. *Health Policy and Planning***,** 1-9.

Paudyal, V. Hansford, D. Cunningham, S. and Stewart, D. (2011) Pharmacy assisted patient self care of minor ailments: a chronological review of UK health policy documents and key events 1997–2010. *Health Policy,* 101 (3)**,** 253-259.

Paudyal, V. Watson, MC. Sach, T. Porteous, T. Bond, CM, et al. (2013) Are pharmacy-based minor ailment schemes a substitute for other service providers? A systematic review. *The British Journal of General Practice,* 63 (612)**,** e472-481.

Pharmaceutical Society of Australia (PSA). (2014) *Building Upon Pharmacists' Practice of Australia: Avision for the Profession* [Online]. Australia: PSA. Available from: http://www.psa.org.au/download/policies/A-vision-for-the-profession.pdf [Accessed 15 April 2017].

Porteous, T. Ryan, M. Bond, CM. and Hannaford, P. (2006) Preferences for self-care or professional advice for minor illness: a discrete choice experiment. *The British Journal of General Practice,* 56 (533)**,** 911-917.

Porteous, T. Wyke, S. Hannaford, P. and Bond, C. (2015) Self-care behaviour for minor symptoms: can Andersen's Behavioral Model of Health Services Use help us to understand it? *The International Journal of Pharmacy Practice,* 23 (1)**,** 27-35.

Pottie, K. Farrell, B. Haydt, S. Dolovich, L. Sellors, C, et al. (2008) Integrating pharmacists into family practice teams: physicians' perspectives on collaborative care. *Canadian Family Physician,* 54 (12)**,** 1714-1717.e1715.

Pumtong, S. Boardman, HF. and Anderson, CW. (2008) Pharmacists' perspectives on the pharmacy first minor ailments scheme. *International Journal of Pharmacy Practice,* 16 (2)**,** 73-80.

Pumtong, S. Boardman, HF. and Anderson, CW. (2011) A multi-method evaluation of the Pharmacy First Minor Ailments scheme. *International Journal of Clinical Pharmacy,* 33 (3)**,** 573-581.

Purssell, E. (2007) Treatment of fever and over-the-counter medicines. *Archives of Disease in Childhood,* 92 (10)**,** 900-901.

Purssell, E. (2009) Parental fever phobia and its evolutionary correlates. *Journal of Clinical Nursing,* 18**,** 210-218.

Rayes, IK. and Abduelkarem, AR. (2016) A qualitative study exploring physicians' perceptions on the role of community pharmacists in Dubai. *Pharmacy Practice,* 14 (3)**,** 738-742.

Regmi, K. Naidoo, J. and Pilkington, P. (2010) Understanding the processes of translation and transliteration in qualitative research. *International Journal of Qualitative Methods,* 9 (1)**,** 16-26.

Rennie, L. Porteous, T. and Ryan, M. (2012) Preferences for managing symptoms of differing severity: a discrete choice experiment. *Value Health,* 15 (8)**,** 1069-1076.

Richard, AA. and Shea, K. (2011) Delineation of Self-Care and Associated Concepts. *Journal of Nursing Scholarship,* 43 (3)**,** 255-264.

Rosenstock, IM. Strecher, VJ. and Becker, MH. (1988) Social Learning Theory and the Health Belief Model. *Health Education Quarterly,* 15 (2)**,** 175-183.

Royal Pharmaceutical Society (RPS). (2006) *The self care challenge: a strategy for pharmacists in England* [Online]. London: RPS. Available from: http://faculty.ksu.edu.sa/hisham/Documents/Files_For_MS_Students/42.pdf [Accessed 26 April 2017].

Rutter, P. (2015) Role of community pharmacists in patients' self-care and self-medication. *Integrated Pharmacy Research and Practice,* 4**,** 57-65.

Saldana, J. (2013) *The coding manual for qualitative research.* 2nd ed. Thousand Oaks: Sage.

Salhia, HO. Ali, A. Rezk, NL. and El Metwally, A. (2015) Perception and attitude of physicians toward local generic medicines in Saudi Arabia: A questionnaire-based study. *Saudi Pharmaceutical Journal,* 23 (4)**,** 397-404.

Santos, HP. Black, AM. and Sandelowski, M. (2015) Timing of translation in cross-language qualitative research. *Qualitative Health Research,* 25 (1)**,** 134-144.

Saramunee, K. Krska, J. Mackridge, A. Richards, J. Suttajit, S, et al. (2014) How to enhance public health service utilization in community pharmacy?: general public and health providers' perspectives. *Research in Social and Administrative Pharmacy,* 10 (2)**,** 272-284.

SelfCare Forum. (2017) *What do we mean by self care and why is it good for people?* [Online]. UK. Available from: http://www.selfcareforum.org/about-us/what-do-we-mean-by-self-care-and-why-is-good-for-people/ [Accessed 20 April 2017].

Shenton, A. (2004) Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information* 22**,** 63 - 75.

Smith, F. (2002) *Research methods in pharmacy practice.* Pharmaceutical Press.

Smith, F. (2009) The quality of private pharmacy services in low and middle-income countries: a systematic review. *Pharmacy World and Science,* 31 (3)**,** 351-361.

Smith, J. Picton, C. and Dayan, M. (2013) Now or never: Shaping pharmacy for the future. London: Royal Pharmaceutical Socity.

Snow, RW. Amratia, P. Zamani, G. Mundia, CW. Noor, AM, et al. (2013) The Malaria Transition on the Arabian Peninsula: Progress toward a Malaria-Free Region between 1960–2010. *Advances in Parasitology,* 82**,** 205-251.

Strauss, A. and Corbin, J. (1994) Grounded Theory Methodology - An Overview. *In:* Denzin, NK and Lincoln, YS (eds.) *Handbook of Qualitative Research.* Thousand Oaks: Sage.

Suleiman, AK. (2013) Self-medication and the advisory role of pharmacists in Riyadh, Saudi Arabia. *Archives of Pharmacy Practice,* 4 (4).

Sultan Qaboos University (SQU). (2017) *Academic programs: college of medicine and health sciences* [Online]. Oman: Sultan Qaboos University Available from: http://www.squ.edu.om/medicine/Acadamic-Programs/Postgraduate/Master-Programs [Accessed 18 February 2017].

Taylor, J. (2011) Factors that influence the public's ability to self-medicate. *SelfCare Journal,* 2 (1)**,** 1-9.

The UK Government. (undated) *Taking sick leave* [Online]. UK: Gov.UK. Available from: https://www.gov.uk/taking-sick-leave [Accessed 1 May 2017].

The World Innovation Summit for Health (WISH). (2016) *Global diffusion of healthcare innovation plenary* [Online]. Qatar. Available from: https://youtu.be/_mrZc_kAJjI [Accessed 20 February 2017].

Thompson, HJ. (2005) Fever: a concept analysis. *Journal of Advanced Nursing,* 51 (5)**,** 484-492.

Times of Oman. (2014) *Oman's Ministry plans cure for sick leave abuse* [Online]. Oman. Available from: http://timesofoman.com/article/37402/Oman/Omans-Ministry-plans-cure-for-sick-leave-abuse [Accessed 17 March 2017].

Treacy, S. (2014) *In Oman, transforming health care* [Online]. The World Academy of Sciences. Available from: https://twas.org/article/oman-transforming-health-care [Accessed 14 February 2017].

University of Nizwa. (2017) *Programs of college of pharmacy and nursing* [Online]. Available from: http://www.unizwa.edu.om/program_details.php?college=4 [Accessed 15 February 2017].

University of Nizwa (UoN). (2017) *Programs of college of pharmacy and nursing* [Online]. Oman: UoN. Available from: http://www.unizwa.edu.om/program_details.php?college=4 [Accessed 15 February 2017].

Urquhart, C. (2013) *Grounded theory for qualitative research: a practical guide.* 1st ed. Thousand Oaks: Sage.

van Eikenhorst, L. Salema, N-E. and Anderson, C. (2017) A systematic review in select countries of the role of the pharmacist in consultations and sales of non-prescription medicines in community pharmacy. *Research in Social and Administrative Pharmacy,* 13 (1)**,** 17-38.

Van Nes, F. Abma, T. Jonsson, H. and Deeg, D. (2010) Language differences in qualitative research: is meaning lost in translation? *European Journal of Ageing,* 7 (4)**,** 313-316.

Wagner, A. Noyce, PR. and Ashcroft, DM. (2011) Changing patient consultation patterns in primary care: an investigation of uptake of the Minor Ailments Service in Scotland. *Health Policy,* 99 (1)**,** 44-51.

Walsh, D. and Evans, K. (2014) Critical realism: An important theoretical perspective for midwifery research. *Midwifery,* 30 (1)**,** e1-e6.

Watson, M. Ferguson, J. Barton, G. Maskrey, V. Blyth, A, et al. (2015) A cohort study of influences, health outcomes and costs of patients' health-seeking behaviour for minor ailments from primary and emergency care settings. *British Medical Journal Open,* 5 (2)**,** e006261.

Watson, M. Holland, R. Ferguson, J. Porteous, T. Sach, T, et al. (2014) Community pharmacy management of minor illness (the MINA study). London Pharmacy Research UK.

Wazaify, M. Al-Bsoul-Younes, A. Abu-Gharbieh, E. and Tahaineh, L. (2008) Societal perspectives on the role of community pharmacists and over-the-counter drugs in Jordan. *Pharmacy World and Science,* 30 (6)**,** 884-891.

Webber, D. Guo, Z. and Mann, S. (2013) Self-care in health: we can define it, but should we also measure it? *SelfCare Journal,* 4 (5)**,** 101-106.

Welle-Nilsen, LK. Morken, T. Hunskaar, S. and Granas, AG. (2011) Minor ailments in out-of-hours primary care: An observational study. *Scandinavian Journal of Primary Health Care,* 29 (1)**,** 39-44.

Wen, Y. Lieber, E. Wan, D. and Hong, Y. (2011) A qualitative study about self-medication in the community among market vendors in Fuzhou, China. *Health and Social Care in the Community,* 19 (5)**,** 504-513.

Wilbur, K. Beniles, A. and Hammuda, A. (2012) Physician perceptions of pharmacist roles in a primary care setting in Qatar. *Globalization and Health,* 8 (12)**,** 1-4.

Wilbur, K. Salam, SE. and Mohammadi, E. (2010) Patient perceptions of pharmacist roles in guiding self-medication of over-the-counter therapy in Qatar. *Patient Preference and Adherence,* 4**,** 87-93.

World Bank Group (WBG). (2016) *The world bank data: Oman* [Online]. USA: WBG. Available from: http://data.worldbank.org/country/oman [Accessed 28 December 2016].

World Health Organisation (WHO). (1978) *Primary health care: declaration of Alma-Ata* [Online]. Alma-Ata, USSR, Geneva: WHO. Available from: http://www.who.int/publications/almaata_declaration_en.pdf?ua=1 [Accessed 10 March 2014].

World Health Organisation (WHO). (1984) *Health education in self-care : possibilities and limitations* [Online]. Geneva: WHO. Available from: http://apps.who.int/iris/bitstream/10665/70092/1/HED_84.1.pdf [Accessed 1 May 2015].

World Health Organisation (WHO). (1998) *The role of the pharmacist in self-care and self-medication: report of the 4th WHO consultative group on the role of the pharmacist* [Online]. The Hague, The Netherlands: WHO. Available from: http://apps.who.int/medicinedocs/pdf/whozip32e/whozip32e.pdf [Accessed 2 June 2015].

World Health Organisation (WHO). (2000a) General policy issues: the benefits and risks of self-medication. *WHO Drug Information,* 14 (1)**,** 1-2.

World Health Organisation (WHO). (2000b) *WHO guidelines for the regulatory assessment of medicinal products for use in self-medication.* [Online]. Geneva: WHO. Available from: http://apps.who.int/medicinedocs/pdf/s2218e/s2218e.pdf [Accessed 5 April 2015].

World Health Organisation (WHO). (2009) *Self-care in the context of primary health care: Report of the Regional Consultation.* [Online]. Bangkok, Thailand: WHO Regional Office for South-East Asia. Available from: http://www.searo.who.int/entity/primary_health_care/documents/sea_hsd_320.pdf [Accessed 10 June 2015].

World Health Organisation (WHO). (2012) *Oman cancer incidence* [Online]. WHO. Available from: http://www.who.int/cancer/country-profiles/omn_en.pdf?ua=1 [Accessed 25 November 2013].

World Health Organisation (WHO). (2014) *Noncommunicable Diseases (NCD) Country Profiles* [Online]. WHO. Available from: http://www.who.int/nmh/countries/omn_en.pdf?ua=1 [Accessed 19 February 2017].

World Self-Medication Industry (WSMI). (2009) *SWITCH:Prescription to nonprescription medicines switch* [Online]. France: WSMI. Available from: http://www.wsmi.org/wp-content/data/pdf/wsmi_switchbrochure.pdf [Accessed 12 May 2014].

World Self-Medication Industry (WSMI). (2014) *The story of self-care and self-medication. 40 years of progress, 1970-2010* [Online]. France: WSMI. Available from: http://www.wsmi.org/wp-content/data/pdf/storyofselfcare_brochure.pdf [Accessed 20 June 2015].

Yousef, AM. Al-Bakri, AG. Bustanji, Y. and Wazaify, M. (2008) Self-medication patterns in Amman, Jordan. *Pharmacy World and Science,* 30 (1)**,** 24-30.

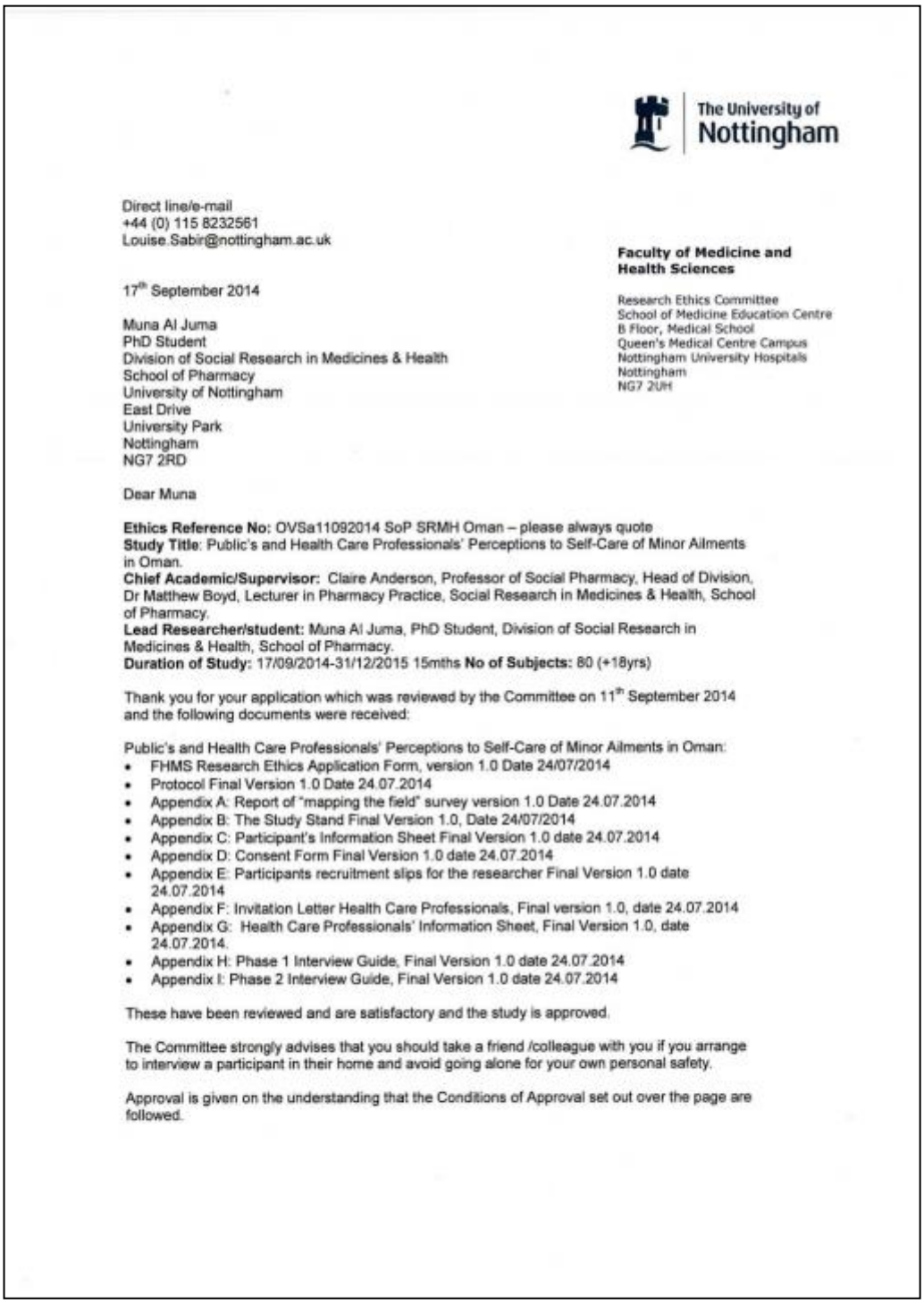
Yousefi, N. Mehralian, G. Peiravian, F. Jahangiri, S. and Ahmadi, R. (2015) Physicians' perceptions of generic medicine in Iran. *Drugs and Therapy Perspectives,* 31 (7)**,** 244-250.

Ziebland, S. and McPherson, A. (2006) Making sense of qualitative data analysis: an introduction with illustrations from DIPEx (personal experiences of health and illness). *Medical Education,* 40 (5)**,** 405-414.

Zola, IK. (1973) Pathways to the doctor—From person to patient. *Social Science and Medicine* 7(9)**,** 677-689.

Appendices

Appendix 1: University of Nottingham ethical approval



The University of Nottingham

Direct line/e-mail
+44 (0) 115 8232561
Louise.Sabir@nottingham.ac.uk

Faculty of Medicine and Health Sciences

Research Ethics Committee
School of Medicine Education Centre
B Floor, Medical School
Queen's Medical Centre Campus
Nottingham University Hospitals
Nottingham
NG7 2UH

17th September 2014

Muna Al Juma
PhD Student
Division of Social Research in Medicines & Health
School of Pharmacy
University of Nottingham
East Drive
University Park
Nottingham
NG7 2RD

Dear Muna

Ethics Reference No: OVSa11092014 SoP SRMH Oman – please always quote
Study Title: Public's and Health Care Professionals' Perceptions to Self-Care of Minor Ailments in Oman.
Chief Academic/Supervisor: Claire Anderson, Professor of Social Pharmacy, Head of Division, Dr Matthew Boyd, Lecturer in Pharmacy Practice, Social Research in Medicines & Health, School of Pharmacy.
Lead Researcher/student: Muna Al Juma, PhD Student, Division of Social Research in Medicines & Health, School of Pharmacy.
Duration of Study: 17/09/2014-31/12/2015 15mths **No of Subjects:** 80 (+18yrs)

Thank you for your application which was reviewed by the Committee on 11th September 2014 and the following documents were received:

Public's and Health Care Professionals' Perceptions to Self-Care of Minor Ailments in Oman:

- FHMS Research Ethics Application Form, version 1.0 Date 24/07/2014
- Protocol Final Version 1.0 Date 24.07.2014
- Appendix A: Report of "mapping the field" survey version 1.0 Date 24.07.2014
- Appendix B: The Study Stand Final Version 1.0, Date 24/07/2014
- Appendix C: Participant's Information Sheet Final Version 1.0 date 24.07.2014
- Appendix D: Consent Form Final Version 1.0 date 24.07.2014
- Appendix E: Participants recruitment slips for the researcher Final Version 1.0 date 24.07.2014
- Appendix F: Invitation Letter Health Care Professionals, Final version 1.0, date 24.07.2014
- Appendix G: Health Care Professionals' Information Sheet, Final Version 1.0, date 24.07.2014.
- Appendix H: Phase 1 Interview Guide, Final Version 1.0 date 24.07.2014
- Appendix I: Phase 2 Interview Guide, Final Version 1.0 date 24.07.2014

These have been reviewed and are satisfactory and the study is approved.

The Committee strongly advises that you should take a friend /colleague with you if you arrange to interview a participant in their home and avoid going alone for your own personal safety.

Approval is given on the understanding that the Conditions of Approval set out over the page are followed.

The University of Nottingham

1. A Favourable opinion is given on the understanding that all appropriate ethical and regulatory permissions are respected and followed in accordance with all local laws of the country in which the study is being conducted and those required by the host organisation/s involved.
2. Please submit a copy of the letter of approval from the Ministry of Health Research Ethics in Oman when this is available for our records. Please submit a letter of support from the College in Oman to use their facilities to conduct your interviews when this is available.
3. You must follow the protocol agreed and inform the Committee of any changes using a notification of amendment form (please request a form).
4. You must notify the Chair of any serious or unexpected event.
5. This study is approved for the period of active recruitment requested. The Committee also provides a further 5 year approval for any necessary work to be performed on the study which may arise in the process of publication and peer review.
6. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Dr Clodagh Dugdale
Chair, Faculty of Medicine & Health Sciences Research Ethics Committee

Appendix 2: MoH ethical approval

Sultanate of Oman
Ministry of Health
Directorate General of Planning

سلطنة عمان
وزارة الصحة
المديرية العامة للتخطيط

Ref. : MH/DGP/R&S/PROPOSAL_ APPROVED/3/2015 الرقم :

Date : 11.01.2015 التاريخ :

الموافق :

Muna Arif Mansoor AL Juma
Principal Investigator

Study Title: " The public's and health care professionals' perception to self-care of minor ailments in Oman"

After compliments

We are pleased to inform you that your research proposal " The public's and health care professionals' perception to self-care of minor ailments in Oman" has been approved by Research and Ethical Review and Approve Committee, Ministry of Health.

Regards,

DIRECTORATE GENERAL OF PLANNING AND STUDIES
SULTANATE OF OMAN - MINISTRY OF HEALTH

Dr. Ahmed Mohamed Al Qasmi
Director General of Planning and Studies
Chairman, Research and Ethical Review and Approve Committee
Ministry of Health, Sultanate of Oman.

Cc
Day file

Appendix 3: interview guide of phase one: the public

Starting the interview

Explain the purpose of the interview, the format and length.
Confirm the understanding of Participant Information Sheet and if any questions need to be answered before starting the interview.
Take permission for audio-recording.

During the Interview

Understanding of/ attitude to the concept of self-care of minor ailment

What does self-care of minor ailments mean to them? Tell me what do you know about minor conditions?

Prompts

What does a minor condition mean to you?
What do you know about self-care?
What do you understand by a minor condition?
Was the "self-care" of minor ailments explained to you before? By who? How did you get the information?
Tell me how you go about self-care (of minor conditions). What do you do?

Responding to minor ailments

What health seeking behavior/pathway do they use to manage their symptoms? What strategies do they use to manage the condition? Tell me how you manage the condition. Understand if the difference in perceiving the symptoms (severity) affects their response.

Prompts

How you manage if you/your child/ carer got _____?
What do you do when you/your child/carer got_____ ?
Who do you consult?

Treatment of minor ailment

What is the type and source of medicines used by them to manage their condition? How they practice self-medication?

Prompts

What helps you manage minor conditions?
What medicines do you use to treat_____?
How to get access to _____?
Was it helpful?
What make you decide to self-medicate?
Tell me how you go about self-medicate?
Why do you self-medicate?

Attitudes toward primary HCP

What are their views toward HCPs in managing their minor conditions? Which health care providers do they consult for minor ailments? Tell me a time when you consulted pharmacist/physician?

Prompts

Do _____ ask you if you tried to treat the condition?
What do you think about _____ asking you in _____?
Do you tell the doctor/pharmacist about your self-management?
How do you feel about _____ enquiring about the medicines/herbal remedies you have taken before consulting him/her?
What do you feel/think about the _____ advice on your/your carer symptoms/condition?
Why do you consult the _____?

Closure of interview

Thank the interviewee for their time and information shared.
Ask them "Is there anything more that you think it is important to tell me related to the topic?"
Make sure the know how to get in touch later if he/she wanted to.

Appendix 4:interview guide of phase two: HCPs

Starting the interview

Explain the purpose of the interview, the format and length.

Confirm the understanding of Participant Information Sheet and if any question need to be answered before starting the interview.

Ask for permission for audio-recording.

Background/demographic questions

E.g. Professional title, age, gender, years of experience, place of working

During the Interview

Understanding of /attitude to the concept of self-care of minor ailment

What does self-care of minor ailments mean to them?

Prompts

What do you know about self-care?

What do you know by minor condition?

Why/ how self-care is important in health care?

Perception toward patient/customer with minor ailment

What are the views of health professionals' about patient consulting them on minor conditions? How the decision is taken? Tell me about your relationship with patients/customers.

Prompts

What do you feel about patient consulting you on minor conditions?

What do patients expect when visiting you for minor ailments? i.e. advice only or medicine.

How you manage (advice/treat) a child/adult with minor condition? *Give example of condition if necessary*

How do you feel about asking patients/customers about self-care/self-medication?

Do you ask the patient/customer if he/she tried to treat the condition before consulting you?

How do you feel about advising patients/customers about self-care?

Attitude to inter-professional relationship

What is the relationship between primary health care teams? Tell me about any inter-professional collaboration that you may have.

Prompts

Tell me about your relationship with GPs/pharmacists?

Tell me about your experience of working with GPs/Pharmacists?

How do you feel about pharmacists enquiring about patient's prescriptions? *(if interviewee is GP)*

Do you feel that management of minor ailments is the role of the pharmacist?

What could be improved between GPs and pharmacist when providing patient care?

Closure of interview

Thank the interviewee for their time and information shared.

Ask them "Is there anything more that you think it is important to tell me related to the topic?"

Make sure the know how to get in touch later if he/she wanted to.

Appendix 5: participant information sheet for phase 1 - English

School of Pharmacy
Division of Social Research in Medicines and Health
Participant's Information Sheet

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Public's and health care professionals' perception to self-care of minor ailments in Oman

Muna Al Juma

I would like to invite you to participate in this research project which forms part of my PhD research. Before you decide to participate, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read and understand the information provided and talk to others about the study if you wish.

What is the purpose of this study?
Minor condition is a common self-limiting condition that in most of the cases can be managed by the person himself without the need to see the physician. The aim of this study is to understand how people respond to their minor ailments, understand their experience of self-care of minor conditions and the use of medicine.

Why have I been invited to take part?
You have been identified to be a suitable candidate for this study. Your involvement will help to learn more about how individual make health decision and manage minor condition.

Do I have to take part?
Your participation is voluntarily. You don't have to take part if you don't want to. This sheet was given to describe the study and invite you to participate. If you do you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw at any time and without giving a reason.

What happens if I do not wish to get involved?
No consequence of not taking part in this study. This will not affect the standard of health care you receive.

What will my participation involve?
If you decide to take part you will be asked to sign a consent form. You will be interviewed by the researcher for approximately 1 to 2 hour(s) based on the interview topic guide, but it is designed to be flexible so as to meet your needs. The interview will be recorded, subject to your permission.

Will the information provided be kept confidential?
All the information you will provide will remain confidential. All identity information will be removed and data will be anonymized and at all times there will be no possibility of you as individuals being linked with the data.

Who will have an access to the data?
The research team only have an access to the data. Recordings of interviews will be stored securely in a locked cupboard and any data stored electronically will be fully password protected. At the end of the study the data will be stored at the University of Nottingham for 7 years. Even if you have decided to take part, you are still free to withdraw from the study at any time without giving any reason and any data collected from you will be destroyed.

Will I be paid for taking part in this study?
You will not receive any money for taking part in this study. However any reasonable travel expenses will be reimbursed.

What are the possible risks of taking part?
There are no foreseeable risks in participating in the study. The main disadvantage to taking part in the study is that you will be donating around an hour of your time to take part. The interviews are unlikely to cover any sensitive issues, and you will not be forced to answer any questions and the interview can be terminated at any time.

What are the possible benefits of taking part?
There are no direct benefits to taking part. However, the information I get from the study will help improve public health care and the services provided by the primary health sector in the future.

Who is organising and funding this research?
The study is organised and funded by the Division of Social Health and medicine at the School of Pharmacy. It has been approved by the University of Nottingham Research Ethics Committee and Ministry of Health of Sultanate of Oman Research and Ethics Committee.

What will happen to the results of the study?
Once the full study is completed, I am planning to disseminate the research findings through publication and conferences. If you would like a copy of the findings, please inform the researcher (contact details provided further down)

What if I have further questions or if something go wrong?
If you have any questions, require more information about this study or to report issues related to the interview, please contact the suitable person from the following contact details:

Researcher: **Muna Al Juma**
Mobile: 91729595 (omantel)
95875212 (nawras)
+44 (0)115 8232277 (office)
E-mail: paxma14@exmail.nottingham.ac.uk

Supervisors: **School of Pharmacy -University of Nottingham- United Kingdom**

	Professor Clair Anderson	**Dr. Matthew Boyd**
Office:	0044- (0)115 9515389	0044- (0)115 9515061
E-mail:	claire.anderson@nottingham.ac.uk	matthew.boyd@nottingham.ac.uk

If you remain unhappy and wish to complain formally, you should then contact the Research Ethics Committee Administrator

Louise Sabir
Office: 0044 -(0)115 8232561
E-mail: louise.sabir@nottingham.ac.uk
Address: School of Medicine Education Centre, B Floor, Medical School, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH

Thank you for reading this information sheet and for considering taking part in this research

Appendix 6: participant information sheet for phase one – Arabic

كلية الصيدلة
قسم البحوث الإجتماعية في الدواء والصحة
ورقة معلومات البحث للمشارك

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

مفهوم العامة والمتخصصين في الرعاية الصحية حول الرعاية الذاتية للوعكات الصّحية البسيطة في سلطنة عمان

الباحثة: منى آل جمعة

تسرني دعوتك للمشاركة في هذا المشروع البحثي والذي يشكل جزء من دراستي للدكتوراه في جامعة نوتنغهام. من المهم أن تفهم الهدف من هذا البحث وما ستنطوي عليه مشاركتك قبل اتخاذ قرار المشاركة. أرجو أن تأخذ كل الوقت الذي تحتاجة لقراءة وفهم المعلومات المقدمة كما يمكنك التحدث عن هذا البحث مع الآخرين.

ما هدف هذا البحث؟

إن الوعكات الصّحية البسيطة هي حالات شائعة ومعظمها تزول ذاتيا؛ حيث يمكن أن يتولى الشخص معالجة نفسه دون الحاجة لرؤية الطبيب. إن الهدف من هذا البحث هو فهم كيف يستجيب ويتعامل الأشخاص للوعكات الصّحية البسيطة، وفهم تجربتهم في الرعاية الذاتية لهذه الوعكات واستخدام الأدويه لمعالجتها.

لماذا تمت دعوتي للمشاركة في هذا المشروع البحثي؟

أنت مرشح مناسب لهذا البحث، وستساعد مشاركتك في معرفة كيفية قيام الفرد باتخاذ قرارات صحية ومعالجة الوعكات الصّحية البسيطة.

هل يجب أن أشارك؟

إن مشاركتك في هذا البحث تطوعية، وليس من الواجب عليك المشاركة في حال عدم رغبتك في ذلك. لقد تم منحك هذه الورقة بهدف تقديم صورة واضحة حول هذا البحث ودعوتك للمشاركة. إذا وافقت على المشاركة في المشروع البحثي يمكنك الاحتفاظ بهذه الورقة كما سيطلب منك توقيع استمارة تؤكد موافقتك. كما يجب الإشارة إلى أنك تملك حرية الانسحاب من هذا البحث في أي وقت دون مطالبتك بتقديم أسباب توضح ذلك.

ماذا سيحدث إن قررت عدم المشاركة؟

لن يؤثر قرارك بعدم المشاركة على نوع الرعاية الصحية التي تتلقاها.

ما الذي تتضمنه مشاركتي؟

في حالة الموافقة على المشاركة سيطلب منك توقيع استمارة الموافقة على المشاركة، وستخضع للمقابلة من قبل الباحث في مدة زمنية تتراوح تقريبا بين ساعة إلى ساعتين وذلك حسب دليل مواضيع المقابلة، التي تم تهيئتها لتكون مرنة وتتوافق مع احتياجاتك، كما سيتم تسجيل المقابلة صوتيا بعد الحصول على موافقتك.

هل ستبقى المعلومات التي أقدمها سرية؟

سيتم التعامل مع المعلومات بسرية تامة، وإزالة هوية المشاركين من البيانات لذلك من غير الممكن أن يتم ربط هوية الفرد بالمعلومات التي قدمها.

من يملك صلاحية الوصول إلى المعلومات ؟

يملك الفريق البحثي فقط صلاحية الوصول والإطلاع على تلك المعلومات، وسيتم حفظ تسجيل المقابلة على نحو آمن في خزائن مغلقة كما أن البيانات المخزنة إلكترونيا سيتم حمايتها بكلمات مرور. بعد الانتهاء من هذا البحث ستحفظ البيانات في جامعة نوتنغهام لمدة سبعة أعوام. وحتى بعد موافقتك للمشاركة في هذا البحث فإن لك كامل الحرية للانسحاب في أي وقت دون تقديم أسباب، وكل المعلومات التي قدمتها سيتم مسحها إذا رغبت.

24.07.2014 Version 1.0

هل سيتم الدفع لي مقابل مشاركتي ؟
لن تحصل على أي مبالغ مالية مقابل مشاركتك في هذا المشروع البحثي، ولكن سيتم تسديد نفقات النقل بتعرفة معقولة (لإجراء المقابلة)

ما هي المخاطر المحتملة الناتجة عن المشاركة في هذا البحث ؟
لا توجد أي مخاطر متوقعة تنتج عن المشاركة في هذا البحث. والخسارة الوحيدة في البحث هو تبرعك بساعة على الأقل من وقتك لإجراء المقابلة. من غير المحتمل أن تتطرق المقابلات في هذا البحث إلى أي قضايا حساسة، ولن تكون مجبرا على الإجابة على أية أسئلة خلال المقابلةاذا لم تكن ترغب للإجابة عليها. كما يمكن إنهاء المقابلة في أي وقت تشاء.

ما هي المنافع المحتملة الناتجة عن المشاركة في هذا البحث ؟
ليست هناك أي منافع مباشرة، ومع ذلك فإن المعلومات التي سأحصل عليها من خلال هذا البحث من المتوقع أن تساهم في تحسين الرعاية الصحية العامة و الخدمات التي يقدمها قطاع الرعاية الصحية الأولية للمجتمع في المستقبل .

ما هي الجهة المسؤولة عن إدارة و تمويل هذا البحث ؟
تتم إدارة وتمويل هذا البحث من قبل قسم البحوث الاجتماعية في الطب والصحة في كلية الصيدلة بجامعة نوتنغهام. ولقد تمت الموافقة على هذا البحث من قبل لجنة أخلاقيات البحث في الجامعة و لجنة أخلاقيات البحث في وزارة الصحة بسلطنة عمان.

ماذا سيحدث لنتائج البحث؟
بعد الانتهاء من البحث والحصول على النتائج كاملة، أخطط لنشر نتائج البحث في النشرات والمؤتمرات. إذا كنت تود الحصول على نسخة من النتائج يرجى إبلاغ الباحث بذلك (تفاصيل الاتصال في الأسفل).

ماذا أفعل إن كانت لدي المزيد من الأسئلة أو حدث أمر خاطئ ؟
إذا كانت لديك أي أسئلة أو تبحث عن مزيد من المعلومات حول هذا البحث أو للإبلاغ عن أي موضوع متعلق بالمقابلة يرجى الاتصال بالشخص المناسب من الأسماء الآتية:

الباحثة:	منى آل جمعة	
رقم الهاتف:	*9/7729595 (عمان تل)* *95875212 (نورس)* +44 (0)115 8232277 *(المكتب)*	
البريد الإلكتروني:	paxma14@exmail.nottingham.ac.uk	
المشرفون على البحث :	قسم الصيدلة - جامعة نوتنغهام – المملكة المتحدة	
	البروفسور / كلير أندرسون	الدكتور / ماثيو بويد
رقم هاتف المكتب:	+44 (0)115 9515389	+44 (0)115 9515061
البريد الإلكتروني:	claire.anderson@nottingham.ac.uk	matthew.boyd@nottingham.ac.uk

إن لم تكن راضيا وترغب في تقديم شكوى رسمية يرجى الاتصال بمنسق لجنة أخلاقيات البحث في جامعة نوتنغهام :

منسق اللجنة:	لويس صابر
رقم هاتف المكتب:	0044 –(0)115 8232561
البريد الإلكتروني:	louise.sabir@nottingham.ac.uk
العنوان:	School of Medicine Education Centre, B Floor, Medical School, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH

شكرا لك على قراءة المعلومات الواردة في هذه الورقة والنظر في إمكانية المشاركة في هذا البحث

24.07.2014 Version 1.0

Appendix 7: participant's Recruitment card, phase one

Protocol number: version 1.0
Participant identification Code:

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Participant's recruitment slips بطاقة بيانات المشارك

الاسم : _____ العمر: _____

العنوان في محافظة مسقط: المدينة _____ الولاية _____

رقم التواصل: _____+968

الجنس: ☐ ذكر ☐ أنثى

الحالة الاجتماعية: ☐ أعزب ☐ أرمل ☐ متزوج ☐ مطلق

الرجاء تسليم الورقة للباحث بعد إكمالها

NAME:..... AGE:.....

ADDRESS IN MUSCAT: City..... Wilayat.....

CONTACT DETAILS: +968.....

GENDER: ☐ Male ☐ Female

MARITAL STATUES ☐ Single ☐ Widowed ☐ Married ☐ Divorced

WHEN COMPLETED, PLEASE RETURN THE SLIP TO THE RESEARCHER

Appendix 8: participant information sheet for phase two – English

School of Pharmacy
Division of Social Research in Medicines and Health
Participant's Information Sheet

The University of Nottingham
UNITED KINGDOM - CHINA - MALAYSIA

Public's and health care professionals' perception to self-care of minor ailments in Oman

Muna Al Juma
Researcher

I would like to invite you to participate in this research project, which forms part of my PhD research. Before you decide to participate, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read and understand the information provided and talk to others about the study if you wish.

What is the purpose of this study?
Minor condition is a common self-limiting condition that in most of the cases can be managed by the person himself without the need to see the physician. The aim of this study is to explore and describe the factors that influence self-care of minor ailments by identifying the general public and health professionals' perception and attitude toward self-care and management of minor ailments.

Why have I been invited to take part?
You have been identified to be a suitable candidate for this study. General practitioners and pharmacy profession working in primary care identified to play a role in the management of minor ailments understand patient's needs and advice on self-care. Your involvement will help to learn more about how individual make health decision and manage minor condition.

Do I have to take part?
Your participation is voluntarily. You don't have to take part if you don't want to. This sheet was given to describe the study and invite you to participate. If you do you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw at any time and without giving a reason.

What happens if I do not wish to get involved?
No consequence of not taking part in this study. There will be no negative outcomes from not participating in the study.

What will my participation involve?
If you decide to take part you will be asked to sign a consent form. You will be interviewed by the researcher for approximately 0.5 to 1 hour based on the interview topic guide, but it is designed to be flexible so as to meet your needs. The interview will be recorded, subject to your permission.

Will the information provided be kept confidential?
All the information you will provide will remain confidential. All identity information will be removed and data will be anonymized and at all times there will be no possibility of you as individuals being linked with the data.

Version 1.0- Phase 2 24.07.2014

Who will have an access to the data?
The research team only have an access to the data. Recordings of interviews will be stored securely in a locked cupboard and any data stored electronically will be fully password protected. At the end of the study the data will be stored at the University of Nottingham for 7 years. Even if you have decided to take part, you are still free to withdraw from the study at any time without giving any reason and any data collected from you will be destroyed.

Will I be paid for taking part in this study?
You will not receive any money for taking part in this study. However any reasonable travel expenses will be reimbursed.

What are the possible risks of taking part?
There are no foreseeable risks in participating in the study. The main disadvantage to taking part in the study is that you will be donating around an hour of your time to take part. The interviews are unlikely to cover any sensitive issues, and you will not be forced to answer any questions and the interview can be terminated at any time.

What are the possible benefits of taking part?
There are no direct benefits to taking part. However, the information I get from the study will help improve public health care and the services provided by the primary health sector in the future.

Who is organising and funding this research?
The study is organised and funded by the Division of Social Health and medicine at the School of Pharmacy. It has been approved by the University of Nottingham Research Ethics Committee and Ministry of Health of Sultanate of Oman Research and Ethics Committee.

What will happen to the results of the study?
Once the full study is completed, I am planning to disseminate the research findings through publication and conferences. If you would like a copy of the findings, please inform the researcher (contact details provided further down)

What if I have further questions or if something goes wrong?
If you have any questions, require more information about this study or to report issues related to the interview, please contact the suitable person from the following contact details:

Researcher: **Muna Al Juma**
Mobile: 00968 91729595 (Oman mobile)
00968 95875212 (ooredoo)
E-mail: paxma14@exmail.nottingham.ac.uk

Supervisors: **University of Nottingham- United Kingdom**

	Professor Clair Anderson	**Dr. Matthew Boyd**
Office:	0044- (0)115 9515389	0044- (0)115 9515061
E-mail:	claire.anderson@nottingham.ac.uk	matthew.boyd@nottingham.ac.uk

If you remain unhappy and wish to complain formally, you should then contact the Research Ethics Committee Administrator

Louise Sabir
Office: 0044 -(0)115 8232561
E-mail: louise.sabir@nottingham.ac.uk.
Address: School of Medicine Education Centre, B Floor, Medical School, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH

Thank you for reading this information sheet and for considering taking part in this research

Version 1.0- Phase 2 24.07.2014

Appendix 9: participant information sheet for phase two – Arabic

كلية الصيدلة
قسم البحوث الإجتماعية في الدواء والصحة
ورقة معلومات البحث للمشارك

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

مفهوم العامة والمتخصصين في الرعاية الصحية حول الرعاية الذاتية للوعكات الصحية البسيطة في سلطنة عمان

الباحثة: منى آل جمعة

تسرني دعوتك للمشاركة في هذا المشروع البحثي والذي يشكل جزء من دراستي للدكتوراه في جامعة نوتنغهام. من المهم أن تفهم الهدف من هذا البحث وما ستنطوي عليه مشاركتك قبل اتخاذ قرار المشاركة. أرجو أن تأخذ كل الوقت الذي تحتاجة لقراءة وفهم المعلومات المقدمة كما يمكنك التحدث عن هذا البحث مع الآخرين.

ما هدف هذا البحث؟

إن الوعكات الصحية البسيطة هي حالات شائعة ومعظمها تزول ذاتيا، حيث يمكن أن يتولى الشخص معالجة نفسه دون الحاجة لرؤية الطبيب. إن الهدف من هذا البحث هو فهم كيف يستجيب ويتعامل الأشخاص للوعكات الصحية البسيطة، وفهم تجربتهم في الرعاية الذاتية لهذه الوعكات واستخدام الأدوية لمعالجتها.

لماذا تمت دعوتي للمشاركة في هذا المشروع البحثي؟

أنت مرشح مناسب لهذا البحث، العالم الطبي الذي يعمل في الرعاية الأولية لهم دور مهم وأساسي في استقبال وعلاج حالات الوعكات الصحية البسيطة من حيث فهم احتياجات المريض من العلاج وتقديم النصائح المتعلقة بالرعاية الذاتية. مشاركتك في هذا البحث له دور كبير في معرفة وفهم كيفية تعامل المريض مع هذه الوعكات وما هي العوامل التي تأثر في اتخاذ قراراته المتعلقة بالصحة.

هل يجب أن أشارك؟

إن مشاركتك في هذا البحث تطوعية، وليس من الواجب عليك المشاركة في حال عدم رغبتك في ذلك. لقد تم منحك هذه الورقة بهدف تقديم صورة واضحة حول هذا البحث ودعوتك للمشاركة. إذا وافقت على المشاركة في المشروع البحثي يمكنك الاحتفاظ بهذه الورقة كما سيطلب منك توقيع استمارة توكد موافقتك. كما يجب الإشارة إلى أنك تملك حرية الانسحاب من هذا البحث في أي وقت دون مطالبتك بتقديم أسباب توضح ذلك.

ماذا سيحدث إن قررت عدم المشاركة؟

أن تكون هناك أي عواقب سلبية في حالة عدم رغبتك للمشاركة.

ما الذي تتضمنه مشاركتي؟

في حالة الموافقة على المشاركة سيطلب منك توقيع استمارة الموافقة على المشاركة، وستخضع للمقابلة من قبل الباحث في مدة زمنية تتراوح تقريبا بين نص ساعة الى ساعة وذلك حسب دليل مواضيع المقابلة، التي تم تهيئتها لتكون مرنة وتتوافق مع احتياجاتك، كما سيتم تسجيل المقابلة صوتيا بعد الحصول على موافقتك.

هل ستبقى المعلومات التي أقدمها سرية؟

سيتم التعامل مع المعلومات بسرية تامة، وإزالة هوية المشاركين من البيانات لذلك من غير الممكن أن يتم ربط هوية الفرد بالمعلومات التي قدمها.

من يملك صلاحية الوصول إلى المعلومات ؟

يملك الفريق البحثي فقط صلاحية الوصول والإطلاع على تلك المعلومات، وسيتم حفظ تسجيل المقابلة على نحو آمن في خزائن مغلقة كما أن البيانات المخزنة إلكترونيا سيتم حمايتها بكلمات مرور. بعد الإنتهاء من هذا البحث ستحفظ البيانات في جامعة نوتنغهام لمدة سبعة أعوام. وحتى بعد موافقتك للمشاركة في هذا البحث فإن لك كامل الحرية للانسحاب في أي وقت دون تقديم أسبابه، وكل المعلومات التي قدمتها سيتم مسحها إذا رغبت.

24.07.2014 Version 1.0 – Phase 2

هل سيتم الدفع لي مقابل مشاركتي ؟
لن تحصل على أي مبالغ مالية مقابل مشاركتك في هذا المشروع البحثي، ولكن سيتم تسديد نفقات النقل بتعرفة معقولة (لإجراء المقابلة)

ما هي المخاطر المحتملة الناتجة عن المشاركة في هذا البحث ؟
لا توجد أي مخاطر متوقعة تنتج عن المشاركة في هذا البحث. والخسارة الوحيدة في البحث هو تبرعك بساعة على الأقل من وقتك لإجراء المقابلة. من غير المحتمل أن تتطرق المقابلات في هذا البحث إلى أي قضايا حساسة، ولن تكون مجبرا على الإجابة على أية أسئلة خلال المقابلة اذا لم تكن ترغب للإجابة عليها. كما يمكن إنهاء المقابلة في أي وقت تشاء.

ما هي المنافع المحتملة الناتجة عن المشاركة في هذا البحث ؟
ليست هناك أي منافع مباشرة، ومع ذلك فإن المعلومات التي سأحصل عليها من خلال هذا البحث من المتوقع أن تساهم في تحسين الرعاية الصحية العامة و الخدمات التي يقدمها قطاع الرعاية الصحية الأولية للمجتمع في المستقبل .

ما هي الجهة المسؤولة عن إدارة و تمويل هذا البحث ؟
تتم إدارة وتمويل هذا البحث من قبل قسم البحوث الاجتماعية في الطب والصحة في كلية الصيدلة بجامعة نوتنغهام. ولقد تمت الموافقة على هذا البحث من قبل لجنة أخلاقيات البحث في الجامعة و لجنة أخلاقيات البحث في وزارة الصحة بسلطنة عمان.

ماذا سيحدث لنتائج البحث؟
بعد الانتهاء من البحث والحصول على النتائج كاملة، أخطط لنشر نتائج البحث في النشرات والمؤتمرات. إذا كنت تود الحصول على نسخة من النتائج يرجى إبلاغ الباحث بذلك (تفاصيل الاتصال في الأسفل).

ماذا أفعل إن كانت لدي المزيد من الأسئلة أو حدث أمر خاطئ ؟
إذا كانت لديك أي أسئلة أو تبحث عن مزيد من المعلومات حول هذا البحث أو للإبلاغ عن أي موضوع متعلق بالمقابلة يرجى الاتصال بالشخص المناسب من الأسماء الآتية:

الباحثة:	**منى آل جمعة**	
رقم الهاتف:	*91729595 (عمان موبايل)* *95875212 (أوريدو)* +44 (0)115 8232277 *(المكتب)*	
البريد الإلكتروني:	paxma14@exmail.nottingham.ac.uk	
المشرفون على البحث :	**قسم الصيدلة - جامعة نوتنغهام – المملكة المتحدة**	
	البروفسور/ كلير أندرسون	**الدكتور/ ماثيو بويد**
رقم هاتف المكتب:	+44 (0)115 9515389	+44 (0)115 9515061
البريد الإلكتروني:	claire.anderson@nottingham.ac.uk	matthew.boyd@nottingham.ac.uk

إن لم تكن راضيا وترغب في تقديم شكوى رسمية يرجى الاتصال بمنسق لجنة أخلاقيات البحث في جامعة نوتنغهام :

منسق اللجنة:	**لويس صابر**
رقم هاتف المكتب:	0044 –(0)115 8232561
البريد الإلكتروني:	louise.sabir@nottingham.ac.uk
العنوان:	School of Medicine Education Centre, B Floor, Medical School, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH

شكرا لك على قراءة المعلومات الواردة في هذه الورقة والنظر في إمكانية المشاركة في هذا البحث

Appendix 10: invitation letter to HCPs - English

Health care professionals' invitation letter

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Dear Sir/Madam,

Subject: The Public's and Health Care Professionals' Perception to Self-Care of Minor Ailments in Oman

I am a PhD student at the University of Nottingham and I am currently conducting research into the public's and health care professionals' perceptions to self-care of minor ailments. As you know Self-care and self-medications are critical components of modern healthcare however a knowledge gap on how people manage their common condition and their attitude to self-care or self-medication in Oman has been identified.

My research involves recruiting health care professionals working in primary care (general practitioners and community pharmacies). Your name was obtained either from the Ministry of Health lists of registered health professionals, or from the institution you work for.

I am contacting you as to ask if you would be willing to participate in the study. The study will involve 0.5 – 1 hour individual interview. The primary purpose of the study is to identify the general public's and health professionals' perceptions and attitude toward a self-care and management of minor ailments in the Sultanate of Oman. This will not be an evaluation of the service that is provided in this health organisation. Your details will be kept confidential in the reports and publications arising from this study. All information will be anonymised to ensure all individuals who participate are not identifiable.

I have attached the participants' information sheet for more details. I will contact you in a few days time *(via the participant's recruitment slip- attached)* to ask if you would be willing to participate and to arrange for the interview. In the meantime please do not hesitate to contact me if you have any queries, my contact details are below.

Yours faithfully,
Muna Al Juma

PhD Research Student
Division of Social Research in Medicines and Health School of Pharmacy, University of Nottingham
NG7 2RD
Mobile: +968 91729595 (oman mobile)
+968 95875212 (ooredoo)
E-mail: paxma14@exmail.nottingham.ac.uk

14.07.2014 Version 1.0 – Phase 2

Appendix 11: invitation letter to HCPs – Arabic

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

رسالة دعوة للمتخصصين في الرعاية الصحية الأولية

الأفاضل/ المتخصصين في الرعاية الصحية الأولية

تحية طيبة وبعد ،،،

الموضوع: مفهوم العامة والمتخصصين في الرعاية الصحية حول الرعاية الذاتية للوعكات الصحية البسيطة في سلطنة عمان

إنني أعمل على مشروع بحثي في موضوع تصور العامة والمتخصصين في الرعاية الصحية حول الرعاية الذاتية للأمراض البسيطة وذلك كجزء من دراستي للدكتوراه في جامعة نوتنغهام. كما تعلمون إن مواضيع الرعاية الذاتية والمداواة الذاتية هي مكونات في مجال الرعاية الصحية الحديثة، ومع ذلك تم اكتشاف فجوة في معرفة كيفية إدارة العامة في سلطنة عمان لحالاتهم الصحية الشائعة وسلوكهم في الرعاية الذاتية والمداواة الذاتية.

إن هذا البحث يستلزم مشاركة المتخصصين في الرعاية الصحية الذين يعملون في الرعاية الأولية (الطب العام والصيدليات في المجتمع). ولقد تم الحصول على بياناتكم من قوائم تسجيل العاملين في الرعاية الصحية في وزارة الصحة ،أو عن طريق المؤسسة التي تعملون بها. لذلك أبعث لكم هذه الرسالة للاستفسار عن مدى استعدادكم للمشاركة في هذا البحث الذي يتضمن مقابلة فردية في مدة زمنية تتراوح تقريبا بين نصف ساعة إلى ساعة.

إن الهدف الرئيس من هذا البحث هو تحديد تصور وسلوك العامة والمتخصصين في الرعاية الصحية نحو الرعاية الذاتية ومعالجة الأمراض البسيطة في سلطنة عمان. ويجب الإشارة إلى أن هذا البحث ليس تقييم للخدمات المقدمة من قبل المنظمات الصحية في السلطنة، كما ستبقى المعلومات الخاصة بكم سرية ومجهولة المصدر في التقارير والمنشورات التي تنشأ من نتائج هذا البحث؛ لضمان عدم التعرف على المشاركين.

ولمزيد من التفاصيل حول هذا الموضوع يمكنكم الإطلاع على ورقة معلومات المشاركة المرفقة بهذا الخطاب. سأقوم بالتواصل معكم خلال الأيام القليلة القادمة (من خلال *بطاقة بيانات المشارك-مرفق*) لمعرفة موافقتكم من المشاركة في هذا البحث و تحديد موعد المقابلة. أرجو عدم التردد في التواصل معي من خلال رقم الهاتف أو البريد الإلكتروني إذا كانت هناك أي تساؤلات تتعلق بالبحث.

وتفضلوا بقبول فائق الاحترام ،،،

الباحثة: منى آل جمعة
قسم البحوث الاجتماعية في الطب والصحة - جامعة نوتنغهام.
رقم الهاتف: 91729595 (عمان موبايل)
95875212 (أوريدو)
البريد الإلكتروني: paxma14@exmail.nottingham.ac.uk

24.07.2014 Version 1.0 – Phase 2

Appendix 12: participant's recruitment card for phase two

Protocol number: version 1.0
Participant identification Code:

The University of Nottingham
UNITED KINGDOM - CHINA - MALAYSIA

Participant's recruitment slips بطاقة بيانات المشارك

الاسم : _____

عنوان المركز الصحي: المدينة: _____ ، الولاية: _____

رقم التواصل: +968_____

الحالة المهنية: ☐ طبيب ☐ مهنة الصيدلة

المشاركة في البحث ☐ موافق ☐ غير موافق ☐ غير متأكد

الرجاء وضعها في الظرف المرفق و تسليمها لقسم الأستقبال في المركز الصحي ليتمكن الباحث من استلامها

NAME: _____

ADDRESS OF WORK PLACE: City _____ **Wilayat:** _____

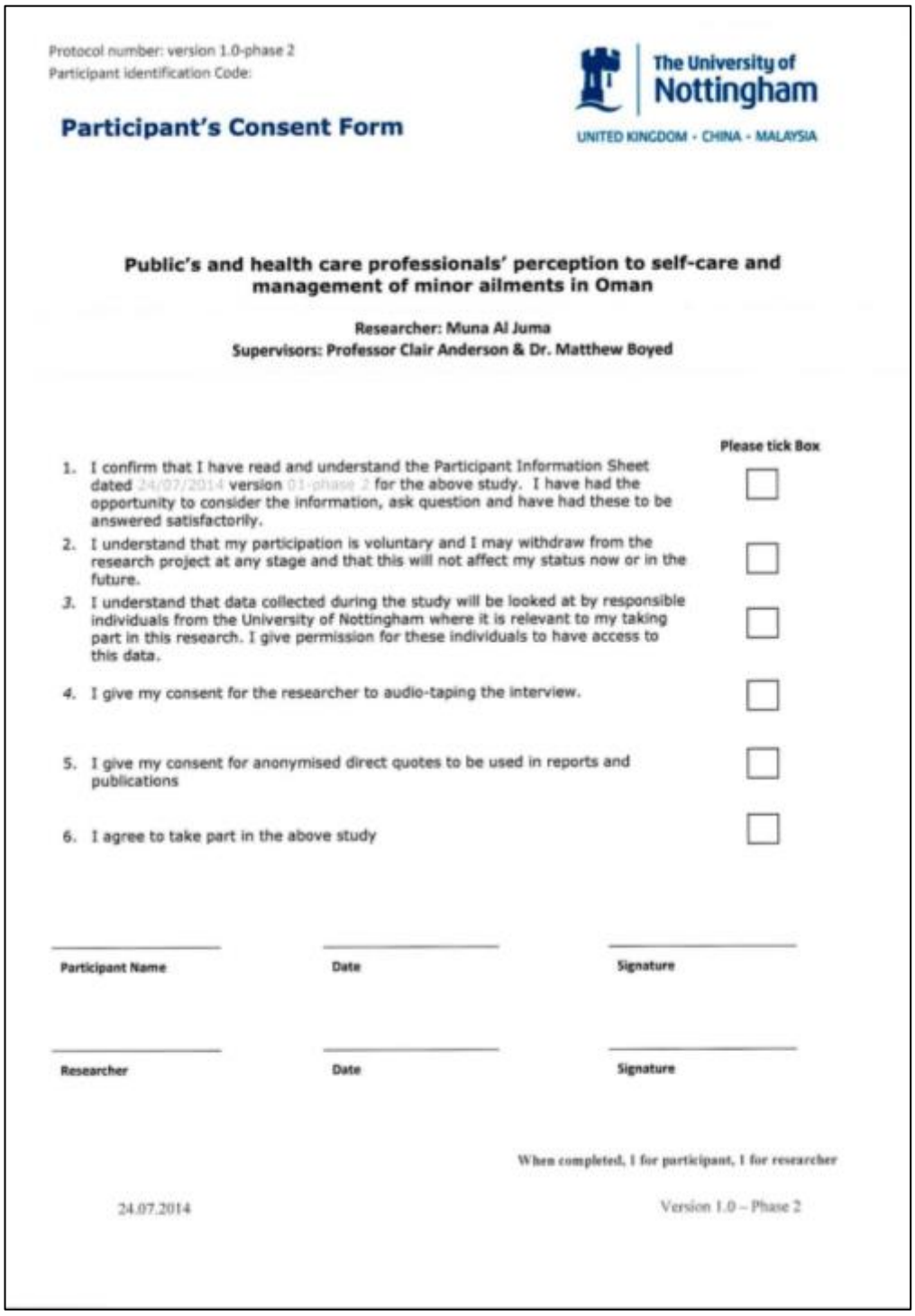
CONTACT DETAILS: +968 _____

PROFESSIONAL STATUES ☐ **PHYSICIAN** ☐ **PHARMACY PROFESSION**

PARTICIPATE IN THE STUDY ☐ **AGREE** ☐ **NOT AGREE** ☐ **NOT SURE**

WHEN COMPLETED, PLEASE RETURN THE SUP TO THE HEALTH CENTRE'S RECEPTION TO BE COLLECTED BY THE RESEARCHER

Appendix 13: participant consent form – English



Protocol number: version 1.0-phase 2
Participant identification Code:

Participant's Consent Form

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Public's and health care professionals' perception to self-care and management of minor ailments in Oman

Researcher: Muna Al Juma
Supervisors: Professor Clair Anderson & Dr. Matthew Boyed

	Please tick Box
1. I confirm that I have read and understand the Participant Information Sheet dated 24/07/2014 version 01-phase 2 for the above study. I have had the opportunity to consider the information, ask question and have had these to be answered satisfactorily.	☐
2. I understand that my participation is voluntary and I may withdraw from the research project at any stage and that this will not affect my status now or in the future.	☐
3. I understand that data collected during the study will be looked at by responsible individuals from the University of Nottingham where it is relevant to my taking part in this research. I give permission for these individuals to have access to this data.	☐
4. I give my consent for the researcher to audio-taping the interview.	☐
5. I give my consent for anonymised direct quotes to be used in reports and publications	☐
6. I agree to take part in the above study	☐

Participant Name	Date	Signature
Researcher	Date	Signature

When completed, 1 for participant, 1 for researcher

24.07.2014 Version 1.0 – Phase 2

Appendix 14: participant consent form – Arabic

Protocol number: version 1.0
Participant identification Code:

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

إستمارة موافقة المشارك

مفهوم العامة والمتخصصين في الرعاية الصحية حول الرعاية الذاتية للوعكات الصحية البسيطة في سلطنة عمان

الباحثة: منى آل جمعة
المشرفين : البروفسور كلير أندرسون و الدكتور ماثيو بويد
جامعة نوتينغهام

الرجاء وضع علامة √

1. أؤكد بأني قرأت وفهمت ما ورد في "ورقة معلومات البحث للمشارك" بتاريخ 2014/07/24 النسخة (1.0-phase2) للبحث المذكور أعلاه، كما أتيحت لي فرصة الإطلاع على المعلومات، وطرح الأسئلة التي تمت الإجابة عنها جميعا كما يجب.
2. أفهم أن مشاركتي طوعية، كما استطيع الانسحاب من هذا المشروع البحثي في أي مرحلة كان، ولن يؤثر ذلك على وضعي الآن أو في المستقبل.
3. أفهم بأن البيانات التي تم جمعها خلال البحث سيطلع عليها أفراد مسؤولون من جامعة نوتنغهام التي تشرف على هذا البحث، كما أوافق على إطلاعهم على هذه البيانات.
4. أوافق على أن يسجل الباحث المقابلة صوتيا.
5. أوافق على استخدام اقتباسات لأقوالي بعد حجب بياناتي الشخصية في التقارير والمنشورات.
6. أوافق على المشاركة في هذا البحث .

اسم المشارك	التاريخ	التوقيع
الباحث	التاريخ	التوقيع

بعد التوقيع: نسخة للمشارك ونسخة للباحث

24.07.2014 Version 1.0 – Phase 2

Appendix 15: confidentiality agreements for transcribing and translation of the Interview transcripts

School of Pharmacy
Division of Social Research in Medicines and Health
Confidentiality Agreement Form

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

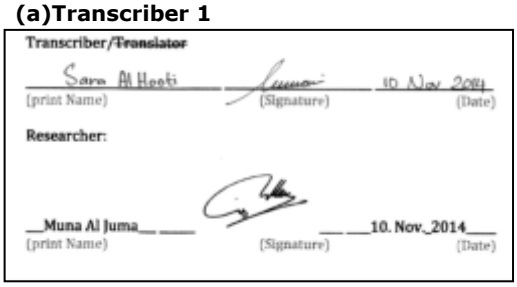
Confidentiality Agreement

I, Al-Khansa Al-Hashmi ,transcriber/translator, agree to maintain the full confidentiality to any and all documents and files received from Muna Al Juma related to her PhD study on (Public's and health care professional's perception to self-care of minor ailments in Oman). Furthermore, I agree to:

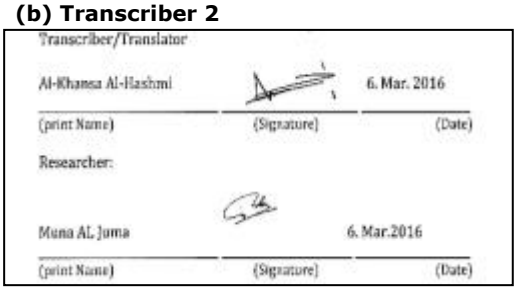
- Not disclose or share any information contained in the documents and files received for translation.
- Not discuss the contents of the documents and files with anyone except with Muna Al Juma.
- Keep all the documents and files in any form or format secure while it is in my possession.
- Return all study-related documents to Muna Al Juma in a complete and timely manner.
- Delete all electronic files containing study-related documents/records from my computer hard-drive and any backup devices once the service requested by Muna Al Juma is completed.

I am aware that I can hold legally liable for any breach of this confidentiality agreement.

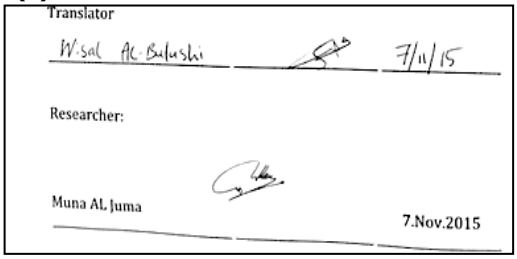
(a)Transcriber 1


Transcriber/~~Translator~~
Sara Al Hosni — 10 Nov 2014
(print Name) (Signature) (Date)
Researcher:
Muna Al Juma — 10. Nov. 2014
(print Name) (Signature) (Date)

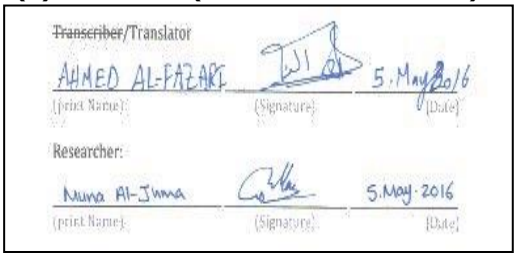
(b) Transcriber 2


Transcriber/Translator
Al-Khansa Al-Hashmi — 6. Mar. 2016
(print Name) (Signature) (Date)
Researcher:
Muna AL Juma — 6. Mar. 2016
(print Name) (Signature) (Date)

(c) Translator Phase 1


Translator
W.sal Al-Bulushi — 7/11/15
Researcher:
Muna AL Juma — 7.Nov.2015

(d) Translator (back-word translation)


~~Transcriber~~/Translator
AHMED AL-FAZARI — 5.May.2016
(print Name) (Signature) (Date)
Researcher:
Muna Al-Juma — 5.May.2016
(print Name) (Signature) (Date)

Appendix 16: confidentiality agreement for certified translation of the Interview transcripts

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

CONFIDENTIALITY AGREEMENT

BETWEEN

UNIVERSITY OF NOTTINGHAM

AND

AL AWOR TRADING

Schedule 1 : Confidential Information

The Disclosing Party intends to share the following information and such information shall, for the avoidance of doubt, be considered Confidential Information for the purposes of this Agreement.

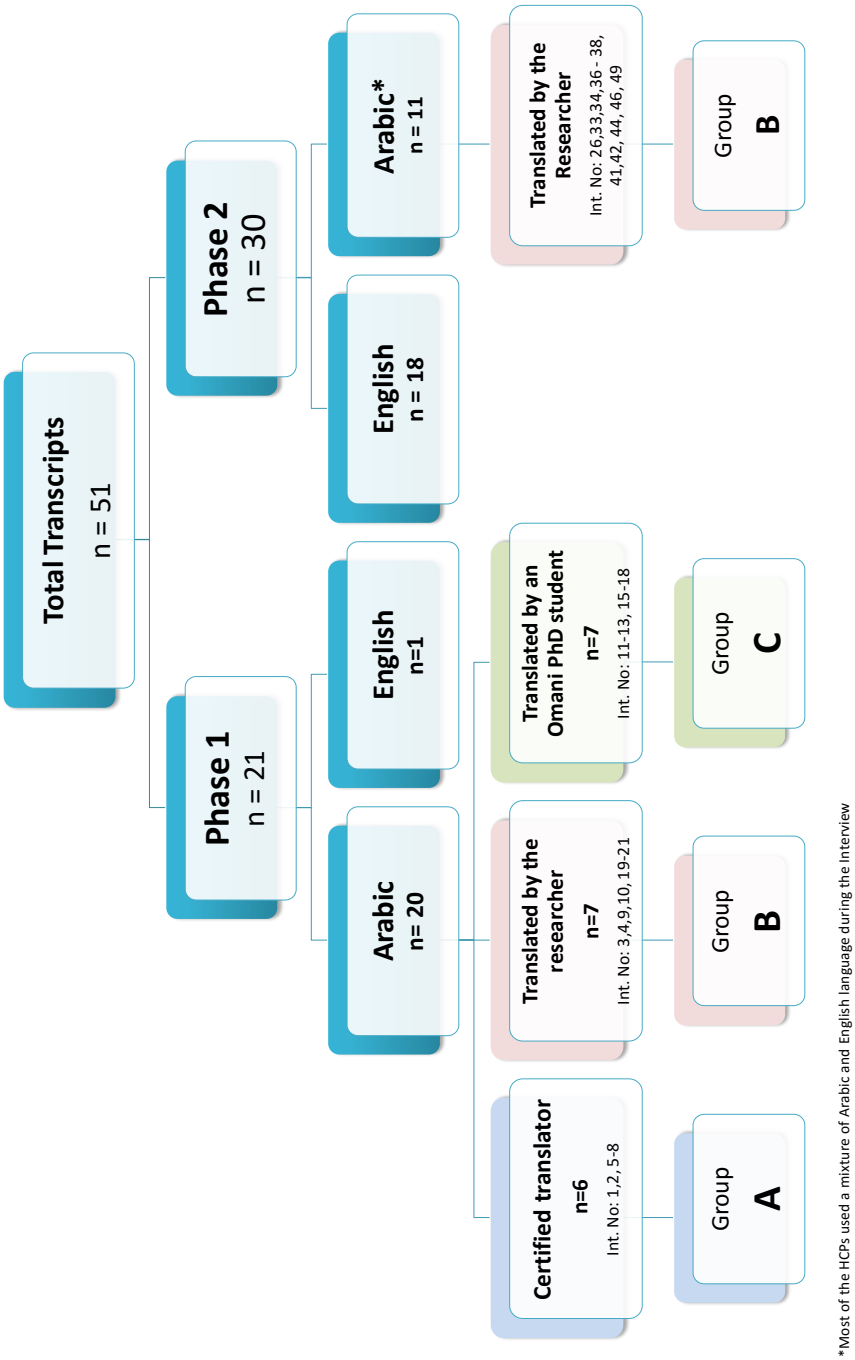
1. Full interview transcripts of the participants involved in the study.

Paul Cartledge
Head of Research Grants and Contracts
Research and Graduate Services
The University of Nottingham

Signed by *Insert Title/Name*
for and on behalf of the University
of Nottingham

Signed by Khalil Al Awor
Chairman/Owner
for and on behalf of Al Awo4r
Trading

Appendix 17: flow-chart of the translation and back-word translation process



Appendix 18: backword translation of phase one transcripts

Phase 1					The planned backward translation of the transcripts (10% of the data)				The actual achieved backward translation of the transcript (actual % achieved of the data)			
Group	Interview	word counts	No. of pages	Total word counts	% word to Total Transcripts	10% word count	No. of pages	min. No of pages (3/Interview)	No. of Interviews	Interviews selected by translator	Actual No. word translated	Total word count	actual % of word count
A	1	6062	18	41809	49%	4181	12	12	4	1,2,6,7,8	2046	12035	29%
	2	10168	27								2520		
	5	6945	26								0		
	6	8955	29								3091		
	7	6399	22								2382		
	8	3280	11								1996		
B	3	3959	13	23247	27%	2325	7	9	3	4,9,10	0	6698	29%
	4	5534	18								2368		
	9	3528	10								1988		
	10	3899	9								2342		
	19	2580	7								0		
	20	1329	4								0		
	21	2418	10								0		
C	11	3137	13	20696	24%	2070	6	6	2	11,13,16	1711	4918	24%
	12	2434	9								0		
	13	4270	14								2051		
	15	2896	10								0		
	16	2003	8								1156		
	17	3053	10								0		
	18	2903	11								0		
Total	20	85752	279										

Appendix 19: backword translation of phase two transcripts

Phase 2					The planned backward translation of the transcripts (10% of the data)				The actual achieved backward translation of the transcript (actual % achieved of the data)			
Group	Interview	word counts	No of pages	Total word counts	10% word count	No. of pages	min. No of pages (3/Interview)	No. of Interviews	Interviews selected by translator	Actual No. word translated	Total word count	actual % of word count
D	5	1836	4	38223	3822	11	12	4	15,17,21,25	0	8556	22%
	12	3572	9							0		
	13	3466	9							0		
	15	9956	16							2773		
	16	2480	7							0		
	17	2417	7							1353		
	20	5023	11							0		
	21	2477	8							1960		
	23	1247	3							0		
	25	4365	9							2470		
	28	3220	5							0		
Total	11	38223	88									

Reference	Arabic text	Translation	Explanation
Phase 1 – Int. no. 1 **Page 11, Line 34**	عليه "بذل عناية" وليس عناية" "مسؤول عن	"obligation of conducts" and not "obligation of results."	The person is responsible to "not harm" and not "responsible for the outcomes" so he should do what he can do not to harm when treating you whether the aimed results achieved or not.
Phase 1 – Int. no. 5 **Page 3, Line 4**	العقل السليم في الجسم السليم	" a healthy mind in a healthy body"; Equivalent in English: a sound mind in a sound body	
Phase 1 – Int. no. 10Page 7, Line 12	فذنبي على جنبي	My sin on my side	It is my fault, so It is my responsibility.
Phase 1 – Int. no. 13 **Page 9, Line 16**	"لن يصيبنا إلا ما كتبه الله لنا."	"Nothing shall ever happen to us except what Allah (God) has ordered for us."	A say from the Quran (V.9:51)
Phase 1 – Int. no. 17 **Page 4, Line 12**	الوقاية خير من العلاج	Prevention is reaped better than cure	The original proverb is "an ounce of prevention is better than a pound of cure"[1]
Phase 1 – Int. no. 19 **Page 7, Line 10**	اللي يلتسع من الشوربة ينفخ في الزبادي	"The one who get his tongue stung because of the soup will blow on the yoghurt". Equivalent in English: A burnt child dreads the fire.	It is said to someone who has experienced some negative situation or consequence; will try to avoid making the same mistake or experiencing the same situation again. Or, this who has experienced a bad output while tried to solve a problem will be very careful when will try to deal with a minor issue.
Phase 2 – Int. no. 11 **Page 5, Line 15**	وين أذنك يا جحا	"Where is your ear Juha?"	Juha or Joha is a famous character in the Arabic culture stories, which gave tricks to learn a lesson about life in a humour approach. This proverb is very well known by the Arab people, and it is said to people who want to follow the long route to reach the aim or solve a problem, although there is a shorter and easier route to follow, so the proverb is about asking Juha "where is your ear?" and he signed to his left ear by passing his right hand over his head.[2]
Phase 2 – Int. no. 12 **Page 2&5, Line 9&10**	حدّث ولا حرج	speak your mind/speak freely/speak without reserve	It's used specifically freely talk about something negatively or to openly criticise what is happening, this does not imply anything and just leaves you wondering what the speaker is trying to say. The metaphoric way of saying that somebody is speaking frankly and without reserve. Locally it is used when the negative attitudes or the problems are obvious for everyone, so you can talk and criticise

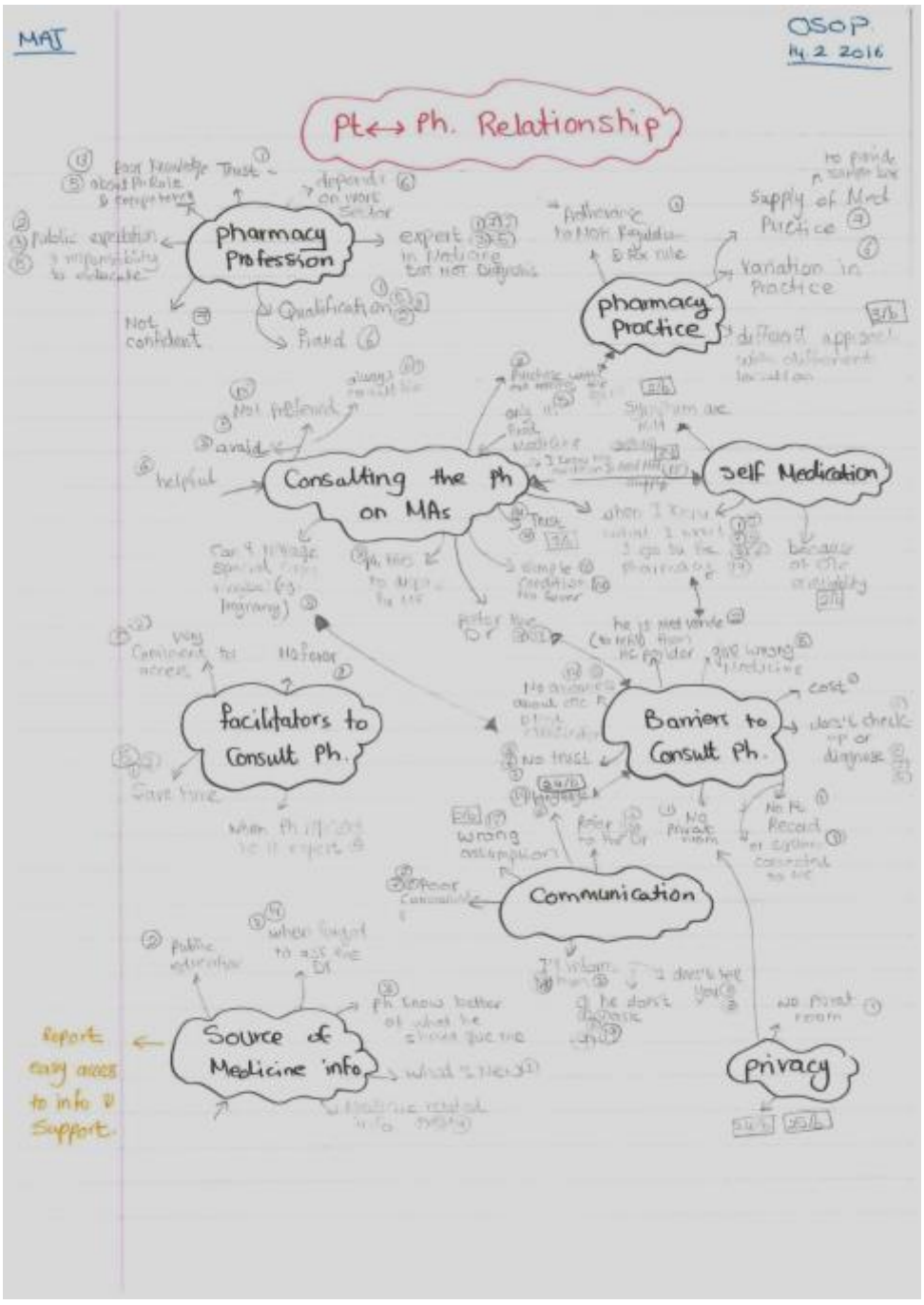
[1] (ref: http://www.almaany.com/ar/dict/ar-en/prevention++is+better+than+cure/)

[2] (ref: https://en.wikipedia.org/wiki/Nasreddin)

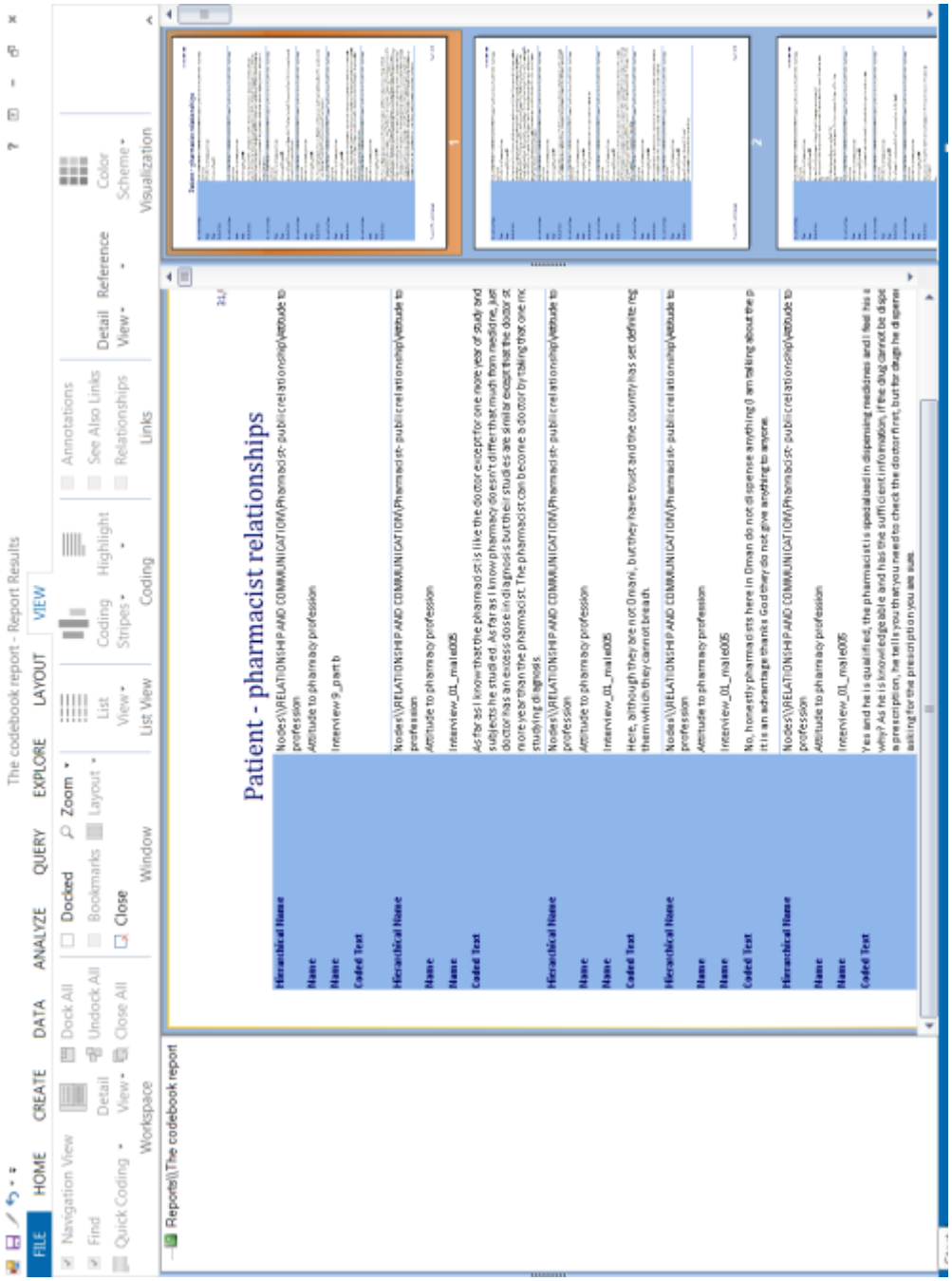
Reference	Arabic text	Translation	Explanation
Phase 2 – Int. no. 12 **Page 4, Line 8**	كأنه العيد	Like a feast (Eid)	It is used when there is a problem or concern that is overlooked by the responsible person or organisation. Like in a Feast (Eid), people are celebrating and being cheerful and happy and try to ignore or forget about any concerns or issues on that day.
Phase 2 – Int. no. 15 **Page 7, Line 13**	" القطاع الصحي يحتاج إلى شّخل "	"The health sector need to be strained" …at all levels including the staff	
Phase 2 – Int. no. 15 **Page 8, Line 8**	الواحد اللي يغرق يحاول يتمسك بقشّة عشّان يعيش	A drowning man will clutch at a straw	When you are desperate, you will look for anything that might help you, even if it cannot help you very much. (ref: the free dictionary.com)
Phase 2 – Int. no. 15, Page 15, Line 39	كأنك تقلع صرمة من " داخلي"	The pain is like "you remove a palm pubs from inside me."	Palm pubs (offshoot) propagation is a type of date palm propagating, the technique and skills is very vital in the process of removing and planting the offshoot, when removing the offshoot from a mother palm tree, it is important not to damage the root" the interviewee a doctor was explaining that some patients describing the pain they have to be similar to the process of removing the offshoot from the mother palm tree. He explained that using this metaphor it 's hard to be understood by other doctors who are not speaking Arabic and who are not even Omani because it is very local and culture related terms are used.[3]
Phase 2 – Int. no. 17, Page 1, Line 9	نكون في واجهة المدفع	We are at the front of the gun	This say is used when a person get blamed for something that he was not the one who is causing it, for example when the employees at the front desk have to deal with customer complaints because of fault caused by the employees at the administrating level of the organisation.
Phase 2 – Int. no. 17 **Page 6, Line21**	يعطي المريض الضوء الأخضر	It gives the patient a green light	The patient has been given an unlimited permit to use or do.
Phase 2 – Int. no. 25 **Page 6, Line 13**	وهوسلاح ذو حدين	It is a double-edged weapon. Equivalent in English (double-edged sword)	It said for something that has either good and bad parts or results; something that has or can has both favourable and unfavourable consequences.
Phase 2 – Int. no. 28 **Page5, Line 15**	سّوف لك نبي	"go and find a prophet."	It is said to someone who is asking for something difficult to get, that to get what he is asking for, he needs a miracle. In this example, the patient was asking a doctor for medicine that has a fast effect on his pain but does not want to take an injection. So he was asking the doctor for oral medication that can relieve the kidney stone pain once taken.
Phase 2 – Int. no. 28 **Page5, Line 29**	جّل من لا يسهو	Glorified He who never oversees nor forget	This say is used to justify the reason for human being to forgetting sometimes.

[3] (Ref of palm tree propagation: http://www.fao.org/docrep/006/y4360e/y4360e09.htm)

Appendix 21: OSOP technique for qualitative data analysis



Appendix 22: the NVivo® codebook



Appendix 23: characteristics of the phase one Interviewees and place of interview

Interview #	Age (Yrs)	Gender	Address	Marital status	Education	Work status	Place of Interview
1	28	Male	Seeb	Divorced	University	working	a coffee shop
2	24	Female	Seeb	Single	University	unemployed	a coffee shop
3	40	Female	Qurayyat	Married	University	working	at home
4	30	Male	Seeb	Married	High School	working	a coffee shop
5	47	Male	Seeb	Married	Middle school	working	a coffee shop
6	31	Male	Seeb	Married	university	working	a coffee shop
7	22	Male	Seeb	Single	University	studying	a coffee shop
8	23	Male	Seeb	Single	college	studying	a coffee shop
9	37	Male	Seeb	Single	University	working	a coffee shop
10	45	Male	Seeb	Married	University	working	a coffee shop
11	34	Male	Seeb	Married	NA	Working	a coffee shop
12	45	Female	Bawsher	Married	School	housewife	at home
13	44	Female	Bawsher	Married	School	housewife	at home
14	34	Female	Bawsher	Married	University	working	a coffee shop
15	56	Female	Bawsher	widowed	School	housewife	at home
16	19	Female	Muttrah	Single	High School	graduated	a coffee shop
17	33	Male	AL Amrat	Married	University	working	a coffee shop
18	62	Male	Bawsher	Married	University	retired	at home
19	55	Male	Muscat	Married	University	working	at work
20	67	Female	Muscat	Married	NA	housewife	at home
21	78	Female	Bawsher	Widowed	NA	housewife	at home

Appendix 24: characteristics of the phase two Interviewees and place of interview

Interview #	Profession	Gender	Sector	Years of Experience	District	Place of Interview
1	A.Ph	Female	Public	NA	Bousher	In work place*
2	Ph	Male	Private	11	Bousher	In coffee shop
3	Ph	Female	Private	17	Bousher	In work place
4	Ph	Female	Public	NA	Muscat	In work place
5	GP	Male	Private	9	Seeb	In work place
6	Ph	Male	Private	NA	Seeb	In work place
7	Ph	Male	Public	15	Muttrah	In coffee shop
8	GP	Female	Public	NA	Muttrah	In work place
9	A.Ph	Male	Private	13	Seeb	Café & Restaurant
10	GP	Female	Public	13	Seeb	Café & Restaurant
11	GP	Female	Public	7	Muttrah	In work place
12	A.Ph	Female	Public	15	Seeb	In coffee shop
13	GP	Female	Public	6	Seeb	In work place
14a	Ph	Male	Private	22	Seeb	In work place
14b	Ph	Male	Private	15	seeb	In work place
15	GP	Male	Public	7	Muscat	In coffee shop
16	Ph	Female	Public	3	Seeb	In work place
17	A.Ph	Female	Public	10	Muttrah	In work place
18	GP	Male	Public	18	Muttrah	In work place
19	GP	Male	Public	2	Muttrah	In coffee shop
20	GP	Female	Public	4	Seeb	Café & Restaurant
21	Ph	Female	Public	1	Muscat	In work place
22	Ph	Female	Public	12	Muscat	In work place
23	GP	Female	Public	29	Muscat	In work place
24	Ph	Female	Private	9	Bousher	In work place
25	Ph	Male	Private	15	Bousher	In work place
26	GP	Female	Private	26	Bousher	In work place
27	Ph	Female	Private	9	Bousher	In work place
28	GP	Male	Private	14	Bousher	In work place
29	GP	Female	Public	2	Muscat	In coffee shop
30	GP	Female	Private	25	Bousher	In work place
*Interview was not recorded per participant request.						

Appendix 25: the study theoretical model