DEFINING THE "GOOD" CONSULTATION: WHAT IS IT AND HOW COULD WE MEASURE IT?

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Abstract

The consultation is an important and ubiquitous interaction in veterinary practice although the definition of a ‘good’ small animal veterinary consultation has yet to be identified. Using a mixed methods approach, this PhD thesis aimed to define what constitutes a good small animal veterinary consultation, identify important constituents, and ascertain which of these could be measured.

A systematic review identified limited good-quality evidence for the appraisal of success of small animal, health problem consultations, with adherence, client satisfaction and vet satisfaction the only published outcome measures available. Subsequently, a qualitative study investigated the perceptions of key consultation stakeholders and proposed a definition for the good consultation as one where *“there is balance; an appropriate shared-decision is reached through two-way communication, all stakeholders are in agreement regarding the next steps, with the patient’s welfare maintained or improved.* This study argued for a re-definition of shared decision-making and a reframing of consultation skills teaching, to place greater emphasis on decision-making. The final study appraised consultation assessment instruments and assessed their suitability for use in further academic studies and in general practice, validating the use of a visual analogue scale as a simplified measure of satisfaction.

The final chapter of this thesis addressed numerous recurring findings, including mismatches in stakeholder expectations, trust and satisfaction with recommendations made for the veterinary profession and veterinary educators.

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To my husband, James, I am sorry for never truly “getting it” until now, thank you for putting up with me when I was being unreasonable.

And finally, to my parents, thank you for everything. I promise to get a real job now.

Abbreviations

Researcher

LC – Louise Corah

Supervisors

KC – Dr Kate Cobb

LM – Professor Liz Mossop

MC – Professor Malcolm Cobb

RD – Dr Rachel Dean

Abbreviations used

7Steps: 7 steps consult scoring

AXIS: Appraisal tool for Cross-Sectional Studies

BVA: British veterinary association

CARE: Consultation and relational empathy

CASP: Critical appraisal skills programme

CA Tool: Critical appraisal tool

CCROG: Calgary-Cambridge referenced observation guides

COREQ: Consolidated criteria for reporting qualitative research

CPD: Continuing professional development

CSQ: Client satisfaction questionnaire

Cx: Customer experience

EBM: Evidence-based medicine

EVM: Evidence-based veterinary medicine

FG: Focus group

GAR: Global affect rating

GCRS: Global consultation rating scale

GP: General practitioner

GSM: Global satisfaction measure

GVCCCM: Guide to the veterinary consultation based on the Calgary-Cambridge model

IQR: Inter-quartile range

IRR: Inter-rater reliability

JAVMA: Journal of the American veterinary medical association

JSAP: Journal of small animal practice

MI: Motivational interviewing

NGT: Nominal group technique

PBOM: Patient-based outcome measure

PCC: Patient-centred care

PRISMA: Preferred reporting items for systematic reviews and meta-analyses

RCT: Randomised controlled trial

RCC: Relationship-centred care

RCVS: Royal college of veterinary surgeons

RIAS: Roter interaction analysis system

SDM: Shared decision-making

SHP: Specific health problem

SQP: Suitably qualified person

SSI: Semi-structured interview

TA: Thematic analysis

VN: Veterinary nurse

VSQ: Veterinarian satisfaction questionnaire

VTS: Veterinarian trust scale

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1 Introduction

1.1 Overview

The consultation is a ubiquitous process undertaken across numerous healthcare fields, including veterinary medicine. However, the importance of this interaction can sometimes be overlooked, in favour of ‘more clinical’ pursuits.

The veterinary consult is traditionally viewed as the triadic interaction between vet, client and animal, similar to the doctor-carer-patient relationship of geriatric or paediatric medicine (Rötzmeier-Keuper et al., 2018). Through multiple, distinct studies, this thesis aims to define what constitutes a “good” small animal veterinary consultation, identify important constituents, and ascertain which of these can be measured.

1.2 The purpose of this thesis

The purpose of this thesis is to examine the small animal consultation from the perspective of the key stakeholders, in particular the vet and the client, and the relevance of this research to first opinion practice will remain at the forefront of methodological decisions. It is hoped that through this research, factors affecting the satisfaction of these stakeholders can be better understood, which may have implications for patient outcomes, veterinary surgeon wellbeing, client retention and service quality.

1.3 Key thesis arguments

This thesis will argue that consultation relationships are more complex than previously reported. Furthermore, whilst a ‘good’ consultation can be defined as one with a subjectively favourable outcome, assessing whether a consultation is ‘good’ or bad is context specific and again, complex. However, the clinical aspects of the consultation, such as the severity of the disease, their effect on the decisions made, and the patient outcomes achieved in light of these factors were not examined in this thesis due to difficulty defining and measuring these constructs.

To achieve the thesis aims, a mixed methods approach has been adopted with each data chapter developing upon the findings of its predecessor in a linear fashion. Figure 1 provides a visual summary, with the figure repeated at the start of every chapter to assist with clarity. The following section introduces the structure of this thesis in more detail.

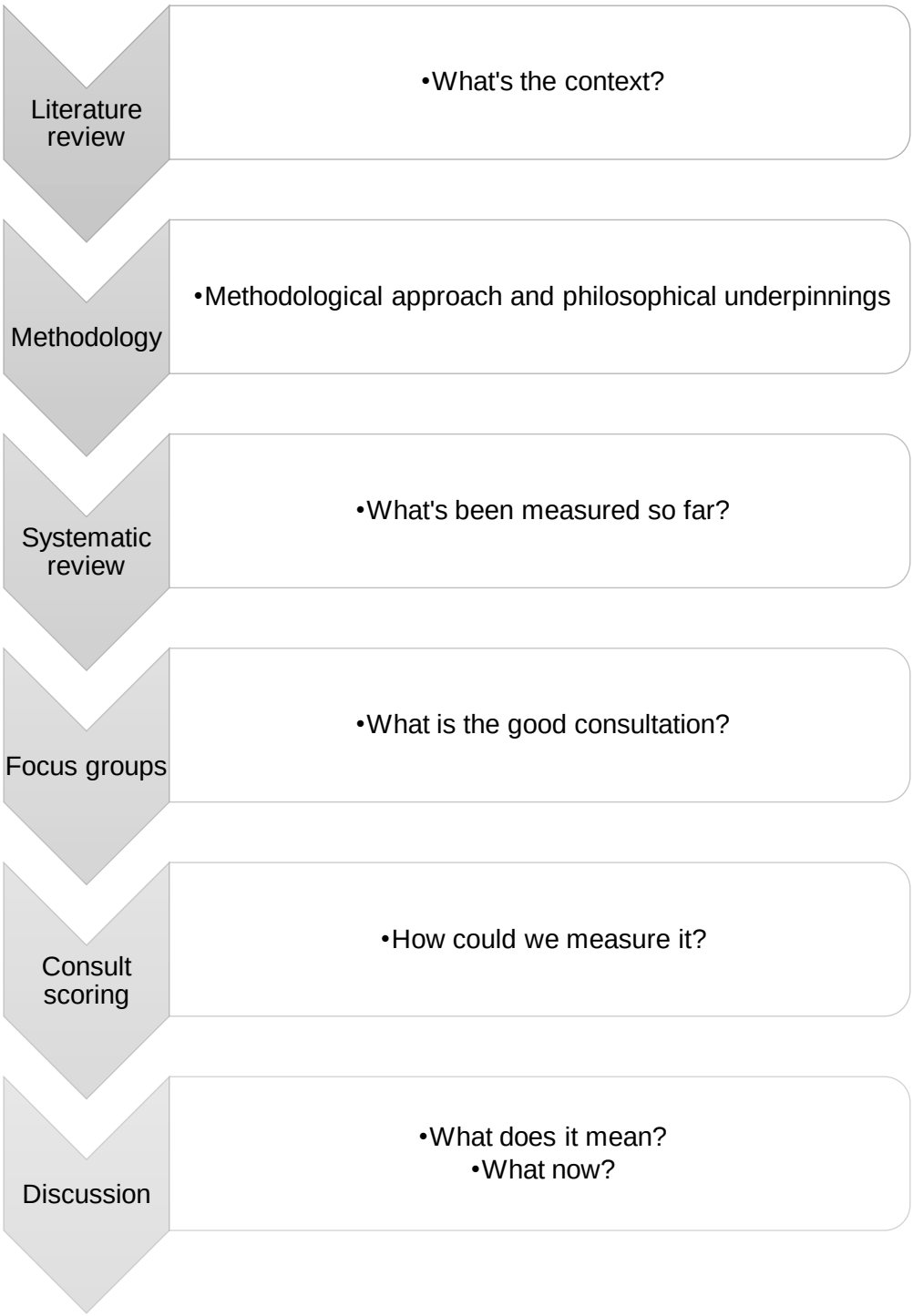


Figure 1: *Thesis structure overview*

1.4 Thesis structure

1.4.1 Literature review

Following this introductory chapter, chapter two will provide both the context for this thesis and an appraisal of the relevant literature in the format of a traditional, narrative review. The narrative review will argue that the veterinary profession is a service industry, therefore a balance is required to ensure that consultation stakeholder expectations and agendas remain collaborative and non-divergent.

1.4.2 Methodology

Chapter three details the methodological approach utilised across the thesis, including the epistemological, ontological, and theoretical perspective. The chapter will introduce Kane's validity framework, a flexible and interpretive paradigm, which will be applied throughout to build the validity argument for the thesis outputs. Subsequently, there are three, distinct data chapters, each consisting of a short introduction, methods, results, discussion and conclusion.

1.4.3 Systematic review

Chapter four consists of a systematic review entitled "Measuring the success of specific health problem consultations in cats and dogs: a systematic review" and identifies instruments previously used to measure consultation 'success'. This chapter will identify previous areas of study and highlight knowledge gaps, with the results used to inform

subsequent data chapters. A portion of this chapter has been published in the Veterinary Record (Corah et al., 2018).

1.4.4 Focus groups

Chapter five uses qualitative research methods to gather consultation stakeholder observations and experiences regarding the content of consults, with value-judgements made by stakeholders as to what constitutes ‘good’ and ‘bad’. This chapter will propose the definition of a ‘good’ consultation and will argue that a reframing of consultation skills teaching is required, placing a greater emphasis on reaching a shared decision in addition to the focus on communication.

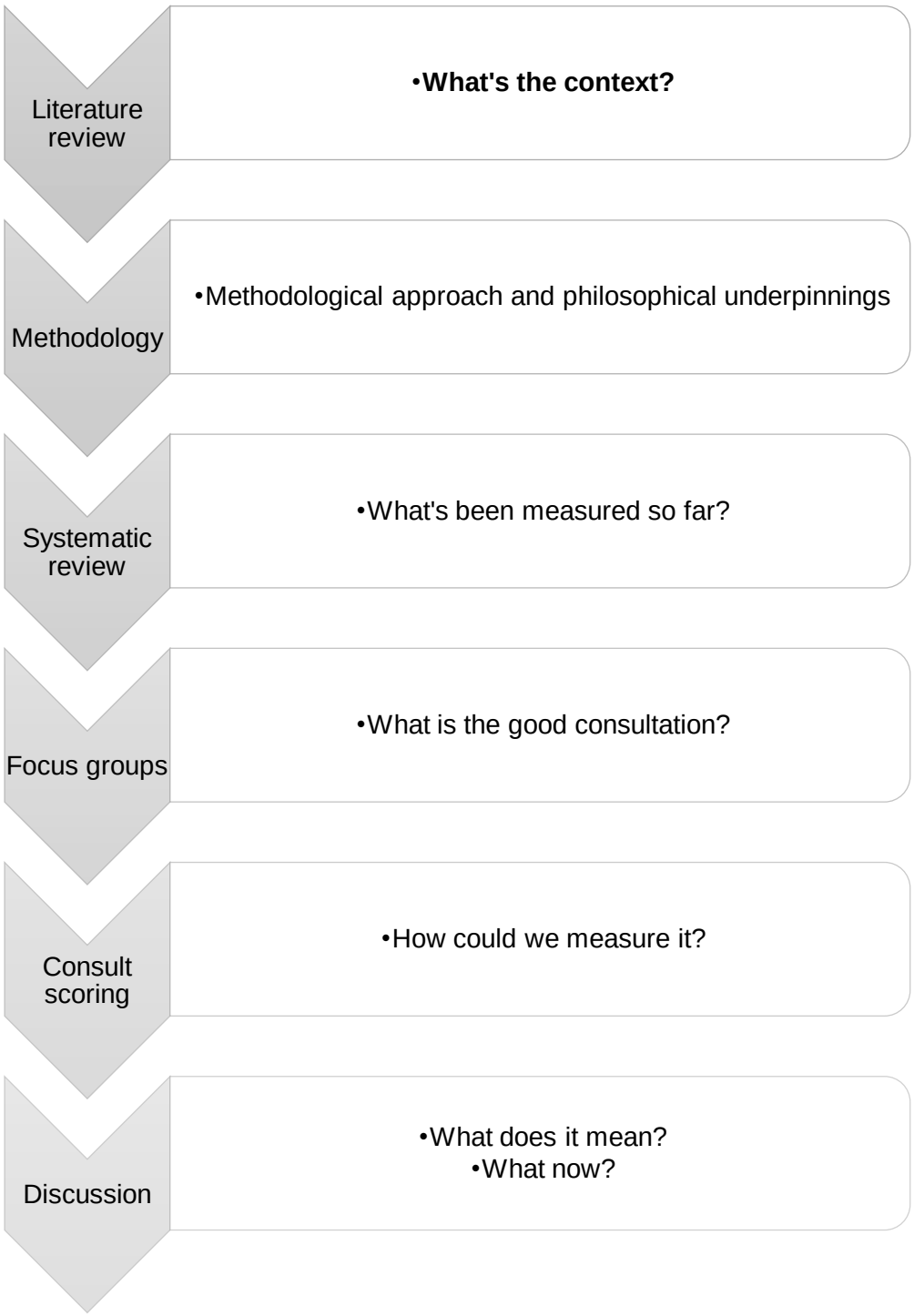
1.4.5 Consult scoring

The final data chapter establishes the feasibility of assessing video-recorded consultations utilising the prior findings of the thesis. This chapter identifies numerous instruments available to assess consultations and will make a validity argument for their use.

1.4.6 Discussion

Finally, the discussion chapter provides a holistic discussion of the thesis findings and suggests opportunities for further work. This chapter will argue for a simplified and pragmatic consultation assessment tool and re-calibration of veterinary surgeon consultation expectations.

2 Literature review



2.1 Overview

For the purposes of this thesis:

1. A consultation will be interchangeably referred to as a consult, a consultation, an appointment or a visit.
2. The terms “vet”, “veterinary surgeon” and “veterinarian” will be used interchangeably, and all mean a qualified member of the veterinary profession, e.g. MRCVS.
3. The term “small animal” means a pet; a cat, dog, rabbit or other small mammal.
4. The terms “owners” and “clients” will also be used interchangeably.

This narrative overview of the available literature on consultations, aims to “set the scene” with respect to current knowledge on consultations. This chapter will introduce the components, structure and context of consultations in small animal veterinary practice and more broadly.

2.1.1 What is a consultation?

“Consultation, noun:

a. The action of consulting or taking counsel together; deliberation, conference.

b. The matter or plan deliberated on.” (Oxford English Dictionary, 2014)

2.1.2 Why is the consult important?

The consultation is arguably the most crucial step in the veterinarian-client-patient relationship. It is a complex interaction (Everitt et al., 2013), and is the point at which the client and the vet interact face-to-face, the patient is examined, and a management or treatment decision is reached. It is through the consultation, that optimal patient outcomes aim to be achieved. With vets reporting increasing pressures to deliver better customer service (Vet Futures Project Board, 2015a), focussing on the primary interaction between veterinary surgeons and their clients offers unparalleled opportunities to engender change in the profession.

2.2 Stakeholders in the consultation

If the medical consultation is defined as a two-way, or dyadic, interaction between a physician and a patient (Pawlikowska et al., 2007), the veterinary consultation is often described as a triadic relationship between the vet, the client and the animal patient. This is sometimes compared to that of the physician – carer – patient relationship seen in geriatric or paediatric medicine (Rötzmeier-Keuper et al., 2018). However, there are a number of assumptions associated with describing the relationship in this way. First, that triadic consults follow a parallel structure to dyadic ones, and therefore require parallel communication and consultation skills (Howells et al., 2006). Second that each stakeholder holds equal influence in the relationship. Ishikawa et al. (2005) showed that this is not always the case, reporting an uneven split in physician-patient-carer talk; with the physician

contributing 49% of talk, the patient contributing 29% and the carer/companion, 22%. Whilst an animal cannot verbally contribute to the consultation, it should still be considered an important stakeholder and significant participant, both through it's physical interactions and the relationships created between client, vet and pet. Rötzmeier-Keuper et al. (2018) used the concept of Balance theory (Heider, 2013), which postulates that consistency and reciprocity is desired in relationship dyads, and that the presence of positive or negative dyads will create unbalance in the wider relationship triad. The authors went on to report four types of triadic relationships (harmonious, dysfunctional, challenging and doubtful), based upon positive or negative relationships and interactions of the vet, client and pet.

Moreover, it could be argued that the interactions within any consultation are actually more complex, as financial success is crucial for sustainability; introducing a fourth stakeholder in the form of the business owner and/or practice manager. Whilst financial considerations are present in both medical and veterinary consultations, the discussion of costs between vet and client is a critical part of the veterinary decision-making process. The requirement for this discussion is not present in medical consultations in the United Kingdom (UK) because of the National Health Service (NHS). This further distinguishes veterinary consultations from medical consultations in the UK.

To understand the consultation, it is important to understand the contexts of each contributing stakeholder. The following subsections examine the individual stakeholders; the vet, the pet, the client and the veterinary practice, incorporating the wider veterinary team. However, note that as the purpose of this thesis is to examine the consultation, there will be limited discussion of the clinical aspects of the consultation, as it is not within the scope of this study.

2.2.1 The vet

2.2.1.1 The veterinary profession in the United Kingdom

There are approximately 22,000 practicing vets in the UK (Royal College of Veterinary Surgeons, 2016), regulated by the Royal College of Veterinary Surgeons (RCVS). Veterinary surgeons have professional responsibilities not only to the animals in their care, but also towards their clients, their team, the wider profession and to the general public (Royal College of Veterinary Surgeons, 2012). Small animal practice (pets) is the largest sector of the profession with more than 50% of UK vets working in small animal/exotic practice (Buzzeo et al., 2014).

The role of a Veterinary surgeon, as set out by the RCVS in the Guide to Professional Conduct (Royal College of Veterinary Surgeons, 2012), is to:

> "*Seek to ensure the health and welfare of animals committed to their care and to fulfil their professional responsibilities by maintaining five*

principles of practice: Professional competence, Honesty and integrity, Independence and impartiality, Client confidentiality and trust and Professional accountability".

In addition, the RCVS code of professional conduct states that the "client" in the context of the client relationship could be the animal's owner, a person acting on behalf of the owner or another person with appropriate authority (Royal College of Veterinary Surgeons, 2012). By providing veterinary services to a client, the contractual vet-client relationship is formed, creating obligations for the vet including communication, obtaining informed consent and discussing costs.

The profession is in a state of change, some of these changes are occurring within the profession, whilst others indicate a wider societal change (Brown and Silverman, 1999; Vet Futures Project Board, 2015b). The following subsections examine some of the challenges currently affecting the profession.

2.2.1.2 Gender diversification

Historically the veterinary profession has been predominantly masculine. However, currently 59.4% of practicing vets in the UK are female (Royal College of Veterinary Surgeons, 2016) and this gender imbalance is set to increase further (Buzzeo et al., 2014; Henry and Treanor, 2012). Feminisation of any profession can generate challenges including an increased gender pay gap and gender

stratification, with men more likely to hold more senior roles (Bolton and Muzio, 2008). Indeed, stratification is seen in veterinary medicine, with men more likely to be an equity partner or director than women (Buzzeo et al., 2014). This seems unlikely to change as male undergraduates are more likely to aspire to practice ownership than female undergraduates (Castro and Armitage-Chan, 2016). Through a combination of all of these factors, it may be that feminisation will play an important and increasing role in the rise in corporate ownership of practices (Henry and Treanor, 2012).

2.2.1.3 Mental health and wellbeing

There are reported to be high levels of occupational stress in the veterinary profession (Dawson and Thompson, 2017). The British Veterinary Association (BVA) 'Voice of the Profession' survey (Vet Futures Project Board, 2015a) reported high levels of dissatisfaction in recent veterinary graduates with 41% stating that their veterinary career had not matched their expectations with many considering non-clinical career options (Nelson-Pratt, 2018). It is important to recognise the sampling limitations of this survey; a self-selected panel of BVA members, which does raise some concerns regarding the generalisability of the results. However, there is also a high suicide rate within the veterinary profession (Bartram and Baldwin, 2010; Stoewen, 2015), which sadly, is not a problem unique to the UK (Bartram and Baldwin, 2010).

Platt et al. (2012) identified a number of factors which could contribute to suicide attempts or ideation in vets; toxic veterinary teams, career worries, issues with patients, long hours and levels of responsibility. These findings were echoed by Gardner and Hini (2006) reporting the results of a postal survey of vets in New Zealand which highlighted factors that contributed to workplace stress including the number of hours worked, a client's expectations, and uncertain patient outcomes. They also found that women experienced higher levels of occupational stress than their male colleagues, and that vets working in small animal or mixed practice described higher levels of stress than those in other species specialisms.

Dawson and Thompson (2017) asserted that personality, particularly neuroticism, is a better predictor of occupational stress than the environment in which a vet works. However, when personality was removed from their model, they found that the working environment was a positive predictor of occupational stress. Unsurprisingly, the authors reported increased stress levels in recently graduated vets when compared with their more experienced colleagues, in agreement with previous research (Gardner and Hini, 2006; Schoenfeld-Tacher et al., 2017). It must be noted that the findings presented by Dawson and Thompson (2017) contradicted research on occupational stress carried out in other healthcare fields such as nursing (Adriaenssens et al., 2015), medicine (Burbeck et al., 2002) and dentistry (Johns and Jepsen, 2015), which all suggest that environmental factors, rather than

personality, are the biggest contributors to occupational stress. Hearteningly, Schoenfeld-Tacher et al. (2017) reported that although personal distress is higher in more recently graduated vets, a decline occurs over time.

However, the fact remains that vets are at least three times more likely to commit suicide than the general population (Platt et al., 2010). Numerous reasons have been proposed including a tendency towards a perfectionist personality (O'Connor, 2007), access to the necessary means (Platt et al., 2010) and the performance of animal euthanasia (Bartram and Baldwin, 2010). While the contributing factors and the solutions to the problem of suicide in the veterinary profession are complex and challenging (Stark and Dougall, 2012), it is hoped that a greater awareness of the problem, and implementation of projects such as the Mind Matters Initiative (RCVS, 2019) can lead to action within the veterinary profession (Stark and Dougall, 2012).

2.2.1.4 The future of the veterinary profession

Predictions for the veterinary profession in the next decade include changes to veterinary business models, rising client expectations, increasing standards of care and improved customer service (Waters, 2017).

In response to the complex and rapidly changing veterinary landscape, The Vet Futures project was commissioned by the RCVS and the BVA.

As a result, a series of reports were published, including an assessment of disillusionment (Ridge, 2016), the future of the profession in Europe (FVE, 2017), public trust (Vet Futures Project Board, 2015c) and a survey eliciting the “voice of the profession” (Vet Futures Project Board, 2015a). The culmination of this work was the publication of a report detailing objectives and recommendations for the profession moving forward (Vet Futures Project Board, 2015b). Objectives included a focus on cohesive leadership, diverse and client-centred businesses with animal welfare at their centre, and improved mental health and wellbeing. Many of these objectives are highly relevant to, and can be enacted through, the key vet-client interaction and the focus of this thesis; the consultation.

2.2.2 The pet

A pet is defined as “A domestic or tamed animal kept for companionship or pleasure” (Oxford English Dictionary, 2014). However, for the purpose of this thesis, a pet means a cat, dog, rabbit or other small furry animal.

The People’s Dispensary for Sick Animals Animal Wellbeing (PAW) Report estimated there to be 11.1 million cats and 8.9 million dogs currently living in the UK (PDSA, 2018). Dogs account for approximately two thirds of a UK small animal vet’s caseload, cats approximately one quarter and exotic species (including rabbits) accounting for the

remainder (Everitt et al., 2013; Robinson et al., 2015a; Sanchez-Vizcaino et al., 2017).

The physical, social and emotional benefits of keeping a pet have been well documented (Barker and Wolen, 2008; Timmins, 2008; Wood et al., 2015) and there is no doubt that the pet is a key stakeholder in the consultation, and the reason for it. However, as the focus of the research is on consultation interactions, a review of the literature examining clinical outcomes was considered beyond the scope of this thesis.

2.2.3 The client

Pet owners in the UK are referred to by vets as “Owners” or “Clients”. More recently, there has been a rise in the trend for increased humanisation of pets, with many being treated as a family member (Boya et al., 2012; Lue et al., 2008). This has led to some owners referring to themselves as “Pet Parents”; however, this is not a universal phenomenon. This attitude change has lead for some to call for a change to “bond-centred practice” which encompasses a more holistic approach and recommends the provision of emotional support for the client alongside the traditional clinical practice (Ormerod, 2008).

2.2.3.1 Types of pet owner

The relationship between a client and their pet can significantly influence many factors including purchasing behaviour (Boya et al.,

2012), information seeking behaviours (Jansen et al., 2010), decision-making (Brockman et al., 2008) and veterinary care seeking behaviours (Boya et al., 2012; Lue et al., 2008). Various studies have used segmentation to categorise animal owners which can allow for the "tailoring" of communication during client interactions (Hawkins et al., 2008). The following subsections examine the client segmentation approaches in more detail.

2.2.3.1.1 Care-seeking behaviour

Lue et al. (2008) reported that a stronger client-animal bond was linked to an increased amount of veterinary care, an increased likelihood of adherence to veterinary recommendations and an increased likelihood to pursue preventative medicine. This study surveyed 2000 pet owners using a purposive sampling strategy ensuring a representative sample. Whilst this research was conducted in the US, it seems likely that these findings should also be broadly applicable to the UK context.

2.2.3.1.2 Purchasing behaviour

Boya et al. (2012) segmented pet owners into three groups based on their purchasing behaviours. The groups were:

1. "Strongly Attached Owners"
2. "Moderately Attached Owners"
3. "Basic Owners"

Some of the behaviours identified for "strongly attached owners" included buying gifts for their dog, making car purchase decisions with their dog in mind, the attitude of "price is no object" regarding pet care

and purchasing a healthy diet for their pet. In contrast, “basic owners” were primarily only interested in meeting a pet’s basic needs. Once again, although this research was conducted in the US, it seems possible that these findings could be broadly applicable in the UK context. However due to the snowball sampling strategy employed, some caution should be exercised before generalisation.

Finally, Jyrinki (2012) postulated that pet-related consumption was actually linked to the construction of a consumer’s personal and social identity. Jyrinki (2012) went on to propose six distinct facets of identity creation for pet owners, with the pet as a way of developing character, a font of well-being, a way of connecting with others, a way of gaining social acceptance or status, a focus for nurture or as an object.

2.2.3.1.3 Information-seeking behaviour

Clients have also been segmented by their information seeking behaviours. Jansen et al. (2010) examined the information seeking behaviours of “hard to reach” Dutch dairy farmers, segmenting them into four categories (Figure 2). The segmentation centred on an individual’s trust in information sources and how open they were towards new sources of information. The authors concluded that, through the use of a proactive approach and communication tailoring, farmers previously thought to be difficult to communicate with can be influenced, leading to animal health and welfare improvements. Even though the research participants in this study were farmers and not pet

owners, these findings can still be considered relevant and applicable to small animal clients when reflecting on their information-seeking behaviours and requirements.

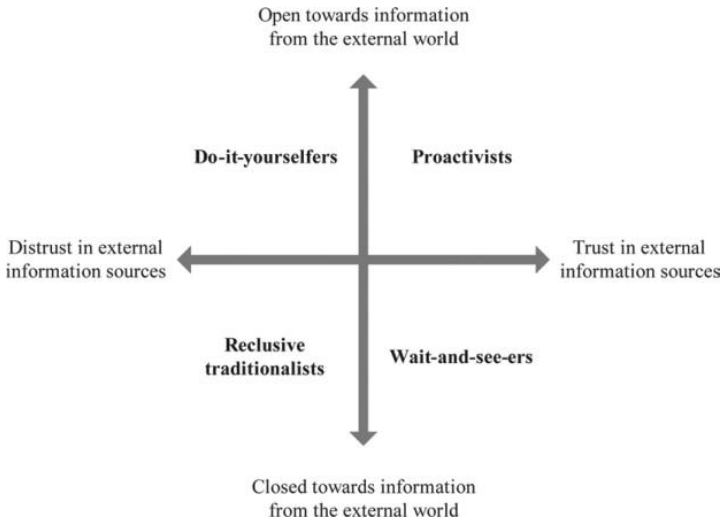


Figure 2: *Types of "Hard to Reach" dairy farmers, reproduced from* Jansen et al. (2010)

In the age of the internet, clients have access to more information than ever before. As part of the BVA's "Voice of the Veterinary Profession" survey, 98% of vet participants reported that they thought a client's behaviour was influenced by information acquired on the internet and of these, 39% felt that this behaviour was generally unhelpful (British Veterinary Association, 2014). This perception could be due to worries over the reliability of the information accessed (Kogan et al., 2017, 2010). Kogan et al. (2017) investigated the attitudes of UK vets to clients using the internet for veterinary information, and reported that 54% of the vets surveyed felt that the internet has a negative impact on the relationship between vets and clients. This is in stark contrast to the client view with the majority of clients being highly positive about using

the internet to gather pet health information (Kogan et al., 2010). However, it is important to note the significant sampling limitations present in the first study (Kogan et al., 2017). The small sample size and convenience sampling strategy mean caution should be exercised before generalisation of the results.

In a survey of UK pet owners, the internet was most frequently cited as a source of pet health information (78.6% of clients), with vets being the second most frequently cited (77.2%). However, it should be noted that vets were still thought of as the most trustworthy source of information for pet health (Kogan et al., 2018). The authors went on to report that approximately half (49.6%) of clients reported having never received website recommendations from their vet although almost all of the participants (95%) reported they would be likely or very likely to visit them if told the name or address of a pet health website. Providing the client with a website recommendation was termed an “information prescription” (Kogan et al., 2008).

One driver for seeking pet health information on the internet is due to client uncertainty regarding when to seek advice, or what constitutes a veterinary emergency, therefore turning to the internet for advice or reassurance (Kogan et al., 2018). In medicine, seeking healthcare information on the internet has been shown to alter the patient’s decision-making (Chen et al., 2018). It seems likely that the same phenomenon could occur in the veterinary setting, but equivalent

research has not yet been performed. Consideration should be given to how decision making in the small animal consult may be affected. However, it could be argued that an acknowledgement of the phenomenon is the first step needed to alter attitudes and visualise the potential positives; better-informed clients may lead to improved animal health and welfare outcomes.

With 90% of adults in the UK using the internet (Office for National Statistics, 2018), internet use for health information seems highly likely to continue. Improved accuracy of the information available online is needed, alongside better signposting from veterinary professionals and a shift away from the currently negative perceptions of vets.

MacArtney et al. (2017) examined the human patient journey in cancer diagnosis using in-depth interviews. They found that many patients were unsure when to seek a doctor's appointment due to being unsure about their symptoms and whether they need to be seen, especially if they felt well in themselves. It is likely that this uncertainty applies equally to pet owners, particularly if their pet seems otherwise well. This is supported by research assessing calls to one out of hours veterinary emergency clinic which found that 55% of calls were not emergencies (Williams et al., 2017). Reasons for calling included; clients phoning for reassurance due to being unsure what constituted an emergency and the use of an emergency clinic out of convenience, rather than necessity. Whilst this is by no means a representative study, it does

raise some interesting points regarding owner education around when to seek veterinary attention and the demand for convenience in a service industry.

What is certain, from the numerous ways to subdivide veterinary clients, is that the approach to each individual needs to be unbiased and flexible, in order to maximise the success of each interaction and meet client expectations. The following subsection will examine these expectations and their significance.

2.2.3.2 Client expectations

In medical consultations, unmet patient expectations have been shown to contribute to reduced patient satisfaction, reduced compliance and lower physician satisfaction (Bell et al., 2002). Research into veterinary client expectations primarily focusses on client expectations of the vet, although limited recent research has examined their expectations of consultations.

Case (1988) examined the expectations of clients of three clinics in the US and reported that clients expect the vet to inform them about health problems, listen to and respond to their concerns, and relate to both the client and the pets as individuals. Whilst this research was published 30 years ago, and much has changed in terms of the veterinary landscape, the findings concur with research published more recently.

Coe et al. (2008) used qualitative methods to elicit the expectations of vets and clients about communication in small animal consults. The authors reported that clients had an expectation for the vet to educate and explain using lay terms along with written support materials. In addition, clients expected vets to be upfront in their communication and provide a range of options. The authors also reported that clients wanted a vet-client partnership that was respectful of their choice and acknowledged the client perspective.

In another paper, Coe et al. (2007) reported vet and clients' perceptions of the financial aspects of veterinary care which included an expectation that the vet should initiate the discussion of costs along with the expectation that discussion of care should take precedence over discussion of cost. Veterinary client expectations of education on pet health topics has since been shown to extend beyond illness education, to include behavioural support (Roshier and McBride, 2013a). However, the limitations of this study must be acknowledged; it was a convenience sample of two veterinary practices in a small geographic area. This, in conjunction with the small sample size, mean that the results must be interpreted with caution as it they may not be representative.

Mellanby et al. (2011) used a survey to investigate the attributes considered to be most important of "a good vet" and reported that clients rate cleanliness, honesty, decisiveness and politeness as the

most important; it follows that clients would expect these attributes from their vet. More recent research by Hughes et al. (2018) used a mixed methods approach to defining client expectations of veterinary surgeon capabilities, culminating in a proposed “veterinary client hierarchy of needs” (Figure 3). Interestingly, the authors found that client expectations were bespoke, with some clients only requirement being to uphold animal welfare. However, other clients’ expectations were more complex requiring additional levels of the pyramid. This provides further evidence for an unbiased and flexible approach to the consultation in order to maximise its success.

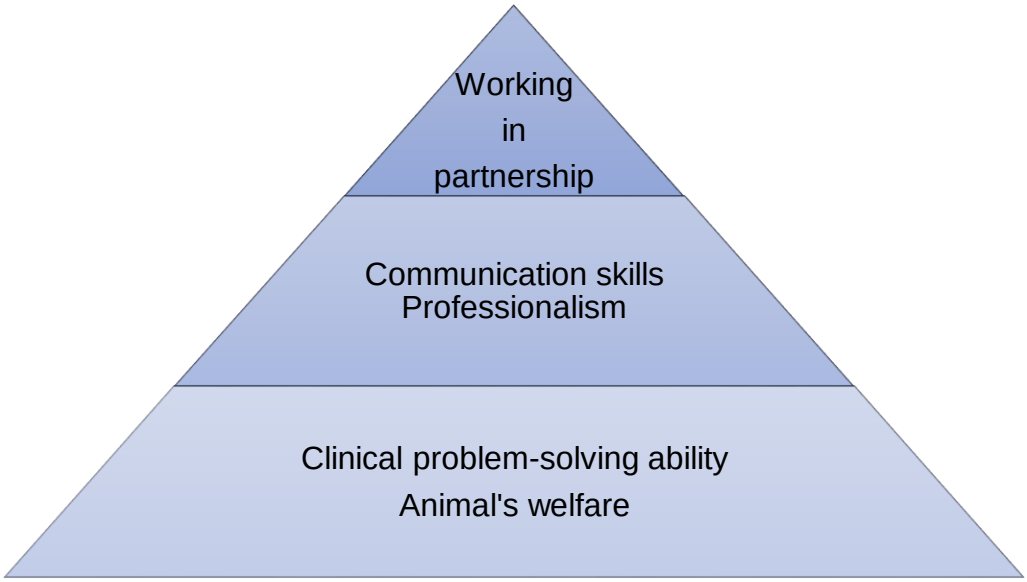


Figure 3: *Schematic of the “client hierarchy of needs”, reproduced from Hughes et al.* (2018)

Finally, Mellanby et al. (2007) examined expressions of clinical uncertainty, reporting that the vast majority of clients (95.3%) would like the vet to discuss any uncertainty that they may have with the majority (87.2%) stating that an expression of uncertainty would either have no effect, or actually improve their confidence in the vet.

The role of each stakeholder participating in the immediate consultation is clear. However, the influence of the wider veterinary team must also be acknowledged. The following subsection examines the veterinary practice as a stakeholder in the consultation.

2.2.4 The veterinary practice

Following amendments to the RCVS regulations, beginning in 1997, allowing non-veterinary qualified individuals to own veterinary practices, there has been a significant move from independently owned practices to corporate ownership. Currently 35% of all practices in the UK are corporately owned by one of six companies and this number has been predicted to rise to between 60 and 70% by 2027 (Anonymous, 2018a). This has created, and will continue to create, challenges for vets in the UK as it has significantly altered the career progression for many; however, it may also present opportunities.

2.2.4.1 The practice team

The practice team is made up of numerous individuals beyond just veterinary surgeons. The practice team usually includes veterinary nurses (VNs) and receptionists, with the addition of paraprofessionals such as physiotherapists becoming more common.

Productive team-working and good interpersonal relationships within a practice team have been shown to increase efficiency and decrease team member cynicism (Moore et al., 2014). Kinnison et al. (2014) cited

numerous benefits to optimal inter-professional practice including increased treatment options, such as weight management clinics, and the financial benefits, for example utilising Suitably Qualified Persons (SQPs) rather than a vet for the prescription of anti-parasitics. However, the authors also cited the barriers to achieving this relationship included poor inter-professional communication and the presence of hierarchy.

While the role of the vet is widely understood by team members and clients alike, the role of a VN or receptionist is often less well defined. Indeed, recent work published by Belshaw et al. (2018) identified the wide range of roles for VNs and receptionists in relation to preventative healthcare including as a trusted information source. In addition, the authors emphasised their importance as a source of reassurance for clients and as rapport/relationship builders. However, it is important to note that the participants in this study were vets and clients, not VNs or receptionists. To this end, there could be additional VN and reception roles, which remain unidentified. Furthermore, and as for any qualitative study, care should be exercised before generalisation of the results. However, this study highlights the importance of these stakeholders and the need for further research.

2.2.4.2 Service quality

Service environments contain well informed and educated clients with consumer choice and this is just as true for the veterinary sector (Pyatt et al., 2016). Brown (2018) cited poor customer service to be the reason

for client defection in 51.4% of circumstances. Despite the low response rate and small sample size of this study, it is clear that customer service is paramount in order to maintain business viability.

The term ‘Customer Experience’ (Cx) was developed in the marketing literature and is the concept that there is an emotional, and often irrational, aspect to consumer behaviour which should be harnessed to co-create value in a service, in contrast to the traditional view of a transactional customer relationship (Gentile et al., 2007). Put simply, a consumer will assess the quality of a service subjectively, on its affective qualities, rather than objectively (Van Doorn et al., 2010).

The theory of value co-creation is the idea that the client is a fundamental and active co-participant in the creation of a service’s value. Pyatt et al. (2017) examined value co-creation in the veterinary sector, theorising that good vet-client relationships provoke loyalty and trust, leading to the creation of value. The authors identified integrated care, communication and trustworthiness as ways to judge the quality of a veterinary service. Other aspects identified included value for money, an outcome-driven service, empathy, a bespoke service and accessibility. Indeed, inter-professional practice is critical to the customer experience with research by Brown (2018) showing that the customer service and communication skills exhibited by VNs and receptionists predicted a client’s level of trust in the vet.

Furthermore, a systematic review of patient experience also found a positive association between patient experience, clinical efficacy and patient safety (Doyle et al., 2013) highlighting the wide ranging implications of service quality.

The remainder of this narrative review will focus on the consultation more specifically.

2.3 Consults

2.3.1 Consultation models

There are numerous frameworks for describing the medical consultation from the simplistic; history, clinical examination, diagnosis and treatment (Ledley and Lusted, 1959), to more complex, communication focused models such as the Pendleton Consultation model (Pendleton et al., 1984), Neighbour's Inner Consultation model (Neighbour, 1987), Calgary-Cambridge Referenced Observation Guides (CCROG) (Kurtz and Silverman, 1996) and P-R-A-C-T-I-C-A-L (Larsen et al., 1997). Subsequently the Kalamazoo consensus statement (Makoul, 2001) was created during the 'Bayer-Fetzer Conference on Physician-Patient Communication in Medical Education', which aims to distil the essential elements from five existing doctor-patient communication models (Figure 4).

Build a relationship
Open the discussion
Gather information
Understand the patient perspective
Share information
Reach agreement on problems and plans
Provide closure

Figure 4: *Essential elements from the Kalamazoo Consensus Statement* (Makoul, 2001)

2.3.1.1 Veterinary consultation models

Currently, veterinary undergraduate consultation skills teaching focuses on the Calgary-Cambridge model (Kurtz and Silverman, 1996), adapted for veterinary medicine by Radford et al. (2006), which is taught across all UK vet schools (Mossop et al., 2015). The Guide to the Veterinary Consultation based on the Calgary Cambridge Model (GVCCCM) consists of 71 individual communication skills, often summarised into a flow diagram (Figure 5) and is intended to be applied flexibly. However, there are numerous limitations to this model including its inability to address the complexity of the vet-client relationship; the GVCCCM is frequently taught primarily as a model for communication, with little exploration of other crucial facets of the consultation, despite them being alluded to within the model. Furthermore, GVCCCM provides a structure for the process of a consultation but does not provide guidance on content. This can lead to the belief that the GVCCCM is a

linear model, as clinical content is not integrated. Everitt et al. (2013) reported that veterinary consultations were not well described by a linear model, reporting that consults are both interactive and iterative. McDermott (2018) analysed video recorded consults in further detail and found that whilst they adhered well to two published consultation models (CCROG (Kurtz and Silverman, 1996) and the Patient-centred Clinical Method (Levenstein et al., 1986)), again, they did not follow that structure in a linear pattern. However, the efficacy of a CCROG-based intervention has been shown to improve the communication skills of vets, developing a more client-centred approach (Shaw et al., 2010).

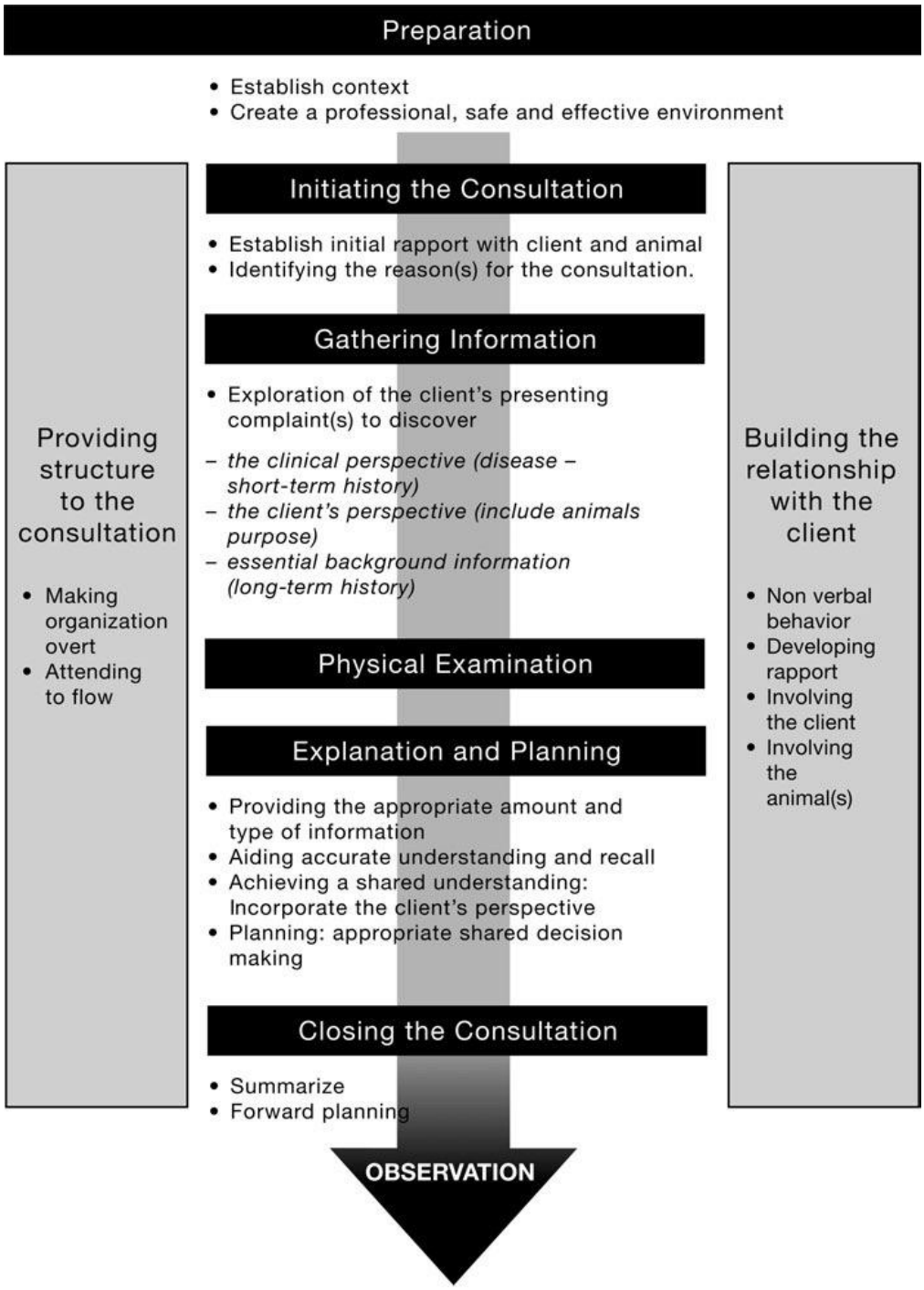


Figure 5: *Summary flow diagram of the guide to the veterinary consultation based on the Calgary-Cambridge model, reproduced from Radford et al.* (2006)

Recently, a consult framework has been devised by UC Davis School of Veterinary Medicine around the mnemonic WISE COACH (Clark, 2018). The WISE COACH model (Figure 6), primarily based on the CCROG, aims to combine process and content skills with a respect for client

autonomy and seeking the optimal outcome for the individual. It has been used as a teaching framework both in the US, and by Vets Now[1] in the UK. The use of a mnemonic to simplify the 71 steps of the CCROG approach may make WISECOACH easier to recall. However, it could be argued that WISECOACH is merely the CCROG repackaged.

W	welcome the client and patient
I	Investigate history
S	Summarise information
E	Explore
[P]	[perform exam]
C	Convey exam findings and your thoughts
O	Outline a plan
A	Ask for feedback
C	Clarify expectations
H	Hold both client and patient interests in mind

Figure 6: *WISE COACH consultation framework* (Clark, 2018)

Frankel and Stein (1999) proposed a "four habits approach" to communication in the consult which was adapted for veterinary medicine by Adams and Frankel (2007). It is based upon the relationship-centred care (RCC) philosophy presented by Beach et al. (2006). The principles of RCC are that:

- The vet-client relationship should encompass the whole identity of each participant
- Emotions are fundamental to these relationships
- The vet and client influence each other
- Creating a genuine relationship is of moral value

[1] Vets Now are a provider of out-of-hours emergency care in the United Kingdom, providing cover for over 1000 small animal veterinary practices.

The four habits model combines key verbal and non-verbal communication skills such as using open questions, building rapport and demonstrating empathy across all steps to deliver a client-centred approach. The four habits are as follows:

- Invest in the beginning
- Elicit the client's perspective
- Demonstrate empathy
- Invest in the end

This approach has shown to be both valid and reliable when used by human physicians (Krupat et al., 2006) and is linked to increased levels of patient satisfaction (Stein et al., 2005).

However, despite the numerous consultation frameworks, there is currently no research available to suggest that any one of the frameworks used in veterinary medicine is more effective than any other.

2.3.2 Types of consults

There are several types of consultation, which have been shown to differ in their content, duration and communication patterns. Numerous papers have been published from analysis of 1720 directly observed small animal consultations in the UK (Robinson, 2014) giving a more descriptive assessment of consult complexity. Three broad types of consultations were described in this work, with first consultations

accounting for 25.5%, preventative medicine 34.7% and revisits 38.2% of a vet's caseload. Whilst these consultations were recorded across a small number of small animal practices, the number of individual consultations observed suggests that the findings can be extrapolated with some confidence.

That consults can be categorised into different types is important in understanding them better. Indeed, Shaw et al. (2008) described differing time allocations between different types of consults, namely reduced relationship building and elicitation of client concerns in problem consultations, when compared with wellness ones. Perhaps, unsurprisingly, the same study reported increased levels of client anxiety and emotional distress in health problem consults, however it is unclear whether this is mediated by the communication or whether this is just a product of the context.

Kleen et al. (2011) postulated three overlapping communication styles useful for different types of farm animal consultations; person-, problem- and solution-oriented. These communication styles could also be applied to small animal consults. Problem-oriented communication can be well described by the GVCCCM (Radford et al., 2006) and is optimal for an acute health problem consultation. However, Kleen et al. (2011) hypothesised two additional strategies; person-oriented communication, best for developing the vet-client relationship and mutual trust, and solution-oriented communication for chronic problems.

A more detailed examination of the salient literature examining the different consultation types follows.

2.3.2.1 Specific health problem

A specific health problem consultation has been defined as any consultation where the primary reason for presentation was due to an injury, disease or clinical signs currently affecting the animal (Robinson et al., 2016a). Chapter four will report the findings of a systematic review examining the literature on small animal specific health problem consults in more detail.

2.3.2.2 Preventative medicine

Robinson (2014) defined a preventative medicine consultation (also referred to as wellness consults) as one where “the presenting problem relates to preventive medicine”. Such consultations include, but are not limited to, vaccines, parasite prevention and clipping the pet’s nails. More recent work has included a systematic review of small animal preventative medicine consultations (Robinson et al., 2018) which identified literature either describing or measuring success in small animal preventative medicine consultations. The review identified one measure of success, veterinary surgeon satisfaction, and identified a further six papers which described various aspects of preventative medicine consults including the length, communication style, decisions taken, and health problems discussed.

Belshaw et al. (2018a) examined vet and client expectations of preventative medicine consultations and found that what a client expects to happen does not always correspond the with vet's expectations. In addition, they reported a wide variation in the content of the consultation, which was largely attributed to the individuality of the vet and life-stage of the pet.

2.3.2.3 Euthanasia

In euthanasia consultations, communication and decision-making can be both delicate and complex. Indeed, Patterson-Kane et al. (2017) recommended the use of quality of life assessments, standardised protocols, and owner bereavement resources in all euthanasia consults. However, empirical research about euthanasia communication and decision-making is limited, primarily due to ethical concerns. One way of circumventing these concerns is to use simulated cases and medical actors. Borden et al. (2010) used undisclosed, standardised clients to investigate the client-centeredness of euthanasia consultations. The authors reported that the vets in the study received the lowest scores for their ability to explore the illness experience and the disease, as they failed to explore client's ideas, concerns and expectations.

The use of empathy during euthanasia consultations has been identified as crucial by both vets (Hartnack et al., 2016) and clients (Adams et al., 2000). The vet, and the wider practice team, are key to providing social support, which may not be available elsewhere, to a client during the

euthanasia process (Adams et al., 2000; Pilgram, 2010). Furthermore, research has shown that 70% of clients are emotionally affected by the death of their pet with around one third of participants in the study reporting symptoms consistent with severe grief (Adams et al., 2000). Predictors of grief included the strength of the client-animal relationship and the amount of support received from the veterinary team.

2.3.2.4 Home visits

Veterinary consultations occurring outside of the consult room are becoming increasingly common, with the introduction of numerous mobile veterinary services. There is plenty of client enthusiasm for these services for reasons of convenience, and to attempt to minimise stress to the pet. However, there has been minimal research performed on these consultations to date. Safety concerns must be considered, with one paper reporting the majority of veterinary work-related injuries were associated with home visits, with increasing age of the vet, and long working hours being important predictive factors (Trimpop et al., 2000).

2.3.3 Presenting problems

The reason for a client presenting their pet for a consultation is termed the “presenting problem” or “chief complaint”. However, it is not uncommon for additional problems, also termed “non-presenting problems”, to be discussed in a single consult. Robinson et al. (2015a) reported that the number of problems discussed in a single consult

ranged from one to eight, and that multiple problems were discussed in 65.4% of consults (the median number of problems discussed per patient was two). In addition, more problems were discussed in preventive medicine consultations when compared first presentation consults (Robinson et al., 2015a). Finally, in health problem consults, the total number of non-presenting problems were higher than total number of presenting problems (Robinson et al., 2015c). This information is significant as it highlights that many clients attend veterinary consults with more than one concern – it is imperative that the vet understands this in order to meet client expectations and address all of their pet's health concerns.

2.3.4 Consultation length

Consult length has been studied extensively in medical general practice in the UK (Wilson, 1991) and to some extent for veterinary consultations.

The average time booked for a veterinary consultation in the UK in 2005 was 10 minutes (Gray and Cripps, 2005) and there is a growing call in the UK for longer veterinary consultations (Belshaw et al., 2018c; Everitt et al., 2013; Robinson et al., 2014). However, there is no up-to-date data regarding average scheduled appointment length in the UK.

Deveugele et al. (2004) examined human general practice consultations and found that longer consults allowed for better listening, more

psychosocial talk and more information giving than in shorter ones. In veterinary medicine, longer consults have been linked to improved aspects of client centeredness (Borden et al., 2010).

Furthermore, approximately half of veterinary consultations in the UK exceed their allocated time (Everitt et al., 2013; Robinson et al., 2014). Shaw et al. (2008) also found this for veterinary consults in North America. A recent study by McDermott (2018) found no significant difference in length of consultation in the UK versus those performed in the USA with median consultation lengths of 16.06 minutes and 16.78 minutes respectively. When cost is discussed in the consult (Coe et al., 2009) or there is an increased number of problems to discuss (Robinson et al., 2014), the length of the consult is increased.

Belshaw et al. (2018) examined the impact of time pressures on preventative medicine consultations, and concluded that consultations involving paediatric, geriatric or complicated patients were most likely to be time-pressured.

Interestingly, Ogden et al. (2004), describing medical consults with a general practitioner, reported a correlation between patients who felt they required more time for the consult and dissatisfaction with emotional elements of communication. While Elmore et al. (2016) reported no correlation between consult length and the communication aspects of patient measures, the authors noted that a certain length of

consult is required for appropriate levels of care. Clearly, the issue of consult time is a complex interaction between the actual time to complete the task and how it is perceived.

2.4 Facets of the consultation

The following subsections examine individual ‘facets’ of the consultation, including communication, relationships and decision making, in more detail.

2.4.1 Communication

Communication is recognised as an important aspect of any consultation. Indeed, good communication skills are seen by veterinary surgeons as essential to being a ‘good vet’ (Mellanby et al., 2011). In medical studies, communication has been shown to affect numerous outcomes including the patient’s medical outcome (Stewart, 1995), patient satisfaction (Hall and Dornan, 1988; Roter et al., 1997), decision-making (Nickel et al., 2017), clinician satisfaction (Roter et al., 1997), and malpractice complaints (Levinson et al., 1997).

Effective communication is one of the competences set out by the RCVS for all graduating veterinary surgeons, with the expectation that they will be able to “*Communicate effectively with clients, the public, professional colleagues and responsible authorities, using language appropriate to the audience concerned*” (Royal College of Veterinary Surgeons, 2014).

Shaw et al. (2004a) highlighted the paucity of veterinary-specific primary research in the field of communication and suggested the use of human medical communications research as a starting point for educators. Since this point, communications research has grown rapidly in veterinary medicine and a larger body of research now exists from the UK, USA and Canada.

Good communication has now been positively associated with client satisfaction (Kurtz, 2006) and ineffective communication with client dissatisfaction, damage to the vet-client relationship and client aspersion (Coe et al., 2008). However, it is important to note that, client satisfaction has only been shown to be dependent on the communication and interaction with the owner rather than the interaction with the pet (Case, 1988).

Coe et al. (2008) postulated that during the consult the vet has a role in providing accessible information to the client and their possible choices, reaching a decision through partnership. The authors also identified communication challenges in companion animal consults; namely financial limitations, the presence of multiple clients and time constraints.

It is widely accepted that, following a greeting and introduction, information gathering should commence with an open question, e.g. "*What can I do for you and Rover today?*" to elicit the clients concerns,

allowing for agenda setting (Mauksch et al., 2008) and to reduce “door-handling” (Baker et al., 2005; Dysart et al., 2011). McArthur and Fitzgerald (2013) examined the communication skills displayed throughout small animal consultations and found that 10% of consults did not contain a single open question. Whilst Dysart et al. (2011) examined the opening segments of small animal consults finding that the majority (76%) of opening statements were open questions. However, the authors also reported that the responses were interrupted before completion in 55% of consults and that clients were allowed to answer for an average of 15.3 seconds before interruption.

Research by MacArtney et al. (2017) found that repeat consultations sometimes occurred due to the patient leaving the first consult without a plan or safety net in place and unclear about when to return. Whilst this is research performed in human cancer patients, it raises several interesting and transferrable ideas, relevant to veterinary medicine. It highlights the importance of good communication in the consultation and of the planning stage, recommended in numerous consultation models, including the Calgary-Cambridge model modified for veterinary teaching (Radford et al., 2006).

Important gender differences in communication have been identified, which may become more relevant with the increasing feminisation of the profession, discussed earlier in this narrative review. Shaw et al. (2012b) reported a more relationship-centred approach to consults, with

more patient talk and rapport-building by female vets. In addition, female vets were seemingly less hurried when compared to their male counterparts. Finally, clients had a greater likelihood of providing lifestyle information to a female vet, however, it is unclear whether this is cause or effect.

Whilst practicing veterinary surgeons place high importance on communication skills, viewing them to be of equal or higher importance than clinical knowledge (Haldane et al., 2017; McDermott et al., 2015), gaps in communications competencies still exist (McDermott et al., 2017). Indeed, poor communication was one of the most common reasons for raising a concern with the RCVS (Royal College of Veterinary Surgeons, 2016). Aside from wishing to avoid a complaint, good communication is important from a patient safety perspective as communication failure in the veterinary practice has been linked to error (Kinnison et al., 2015; Oxtoby et al., 2015). The reasons for gaps in communication competencies identified by McDermott et al. (2017) were;

- Training – vets graduating before 2000 received no formal communication skills training
- The overall communication skills of recent graduates
- Innate communication ability – some people are naturally better at communicating than others

Unfortunately, McDermott et al. (2017) also identified a minimal interest in additional communication skills training, with vets citing a lack of time and money, and the opinion that experience is a teacher. Some of the more experienced vets felt it was too late to start learning new communication skills and some felt training showed a lack of real-world fidelity. An increase in communication skills training in universities was recommended by McDermott et al. (2017), as was screening undergraduate applicants for their communication skills and improving the availability of continuing professional development (CPD) in multiple formats.

2.4.1.1 Communication skills

Kurtz et al. (2016) divide communication skills into three categories: content, process and perceptual skills. Content skills consist of information gathering and giving during the consult (the content of the consult), process skills are how a vet communicates and comprises both verbal and nonverbal communication (what is said, and how), while perceptual skills incorporate the cognitive skills such as clinical reasoning with the relationship building skills, requiring emotional intelligence.

Denniston et al. (2017) used systematic review methodology alongside a qualitative synthesis to examine communication skills learning outcomes from across various healthcare professions including medicine, pharmacy, veterinary medicine and dentistry. Over 200

learning outcomes were identified and synthesised into four themes, three of which followed those defined by Kurtz et al. (2016); content, process and perceptual skills. Knowledge was added as a fourth theme for communication skills learning outcomes which is defined as the understanding of communication and how it is affected by emotion and relationships (Denniston et al., 2017).

2.4.1.2 Non-verbal communication

Traditionally, communication is split into verbal and non-verbal. Much of the published literature focuses on verbal aspects of communication, however, non-verbal communication should also be considered.

Mehrabian (1968) split non-verbal communication into posture and position, such as physical distance between participants, touching and relaxation cues, movements, facial expressions and verbalisations, such as facial pleasantness, intonation and gesticulation. Mehrabian (1981) went on to postulate that consistency between words, tone and body language affects how likeable a communicator is – with inconsistency creating dislike and subsequent distrust.

DiMatteo et al. (1980) reported that physicians who had good non-verbal communication skills received higher patient satisfaction ratings than those who were deemed less sensitive. Gabbott and Hogg (2000) showed significant differences in a customer's reaction to a service

encounter, depending on the non-verbal behaviours displayed by the service provider.

There has been minimal research into non-verbal communication in veterinary medicine. Tuisku et al. (2018) used skin conductance and facial Electromyography (EMG) readings, in combination with Likert scales designed to elicit information about the trustworthiness and proficiency of the vet. The authors found that direct eye contact and a face-on body posture, in conjunction with an “emotional” communication style correlated with increased ratings of knowledge and trustworthiness. However, this small study is not without significant limitations and further research into non-verbal communication in veterinary medicine is required.

2.4.1.3 Measuring communication

Numerous methods of measuring verbal communication (Burt et al., 2014; Hall et al., 1981; Mishler, 1984) and non-verbal communication (Tuisku et al., 2018) have been described in the medical and veterinary literature.

Boon and Stewart (1998) systematically examined doctor-patient communication assessment tools in the scientific literature, between 1986 and 1996, and found 44 unique instruments described. The instruments varied in their validity and reliability and, crucially, the few

instruments which had been assessed for construct validity through comparison with a second instrument showed poor correlation.

The Roter Interaction Analysis System (RIAS) is reported to be the most widely used assessment tool for medical interactions across a variety of fields (Roter and Larson, 2002; Sandvik et al., 2002). It involves the categorization of an interaction into distinct entities to explore the verbal communication and examines the proportion of the consultation spent gathering data, educating or counselling the client, building the relationship and forming a partnership. Within this, individual phrases are then categorised by content (for example medical history or treatments) and form (e.g. information giving or questioning).

RIAS coders are also able to calculate other measurements through a single consultation analysis; a Global Affect Rating (GAR) and a Relationship-centred care (RCC) score. The GAR uses a five-point numerical scale (with one being low and five high) to examine the positive and negative emotional tones of vets and clients throughout the consultation. Scores are based on the overall impression of the vocal tone by the coder. The RCC score examines the balance between client-centred and vet-centred dialogue. Discussion of biomedical topics (information gathering and giving by the vet) are categorised as vet-centred while discussion of lifestyle, rapport building and information gathering by the owner is categorised as client-centred. A high RCC score is a measure of a client-centred consultation.

RIAS has been widely validated across numerous disciplines in medical literature (Roter and Larson, 2002) and the methods have been described in veterinary literature (Shaw et al., 2004b). However, there is concern that, due to the coding methodology, a bias towards the psychosocial (modified to bio lifestyle-social in the veterinary setting (Shaw et al., 2006)) component of a consultation exists (Mead and Bower, 2000). In the context of a specific health problem consultation, this bias would likely be compounded as biomedical information provision by the veterinary surgeon would be coded as 'doctor-centred' behaviour or paternalistic care. It could be argued that the biomedical aspect of a health problem is crucial to the vet-client-animal relationship; without the necessary biomedical information, a clinician cannot inform the client and therefore a decision cannot be reached, shared or otherwise. Therefore, a consultation could be biased towards a lower relationship-centred care score via the coding method in this model. To this end, the RCC score, while reliable, due to its standardised method described in medical literature (Mead and Bower, 2000), may not be a valid tool for measuring relationship-centred care. RIAS has been assessed and found to have acceptable inter-rater reliability when used to quantitatively assess veterinary consultations (Shaw et al., 2004b). The use of RIAS to assess veterinary consultations is not without its limitations, particularly the validity of its application to specific health problem consultations. Nevertheless, it remains the most widely used and accepted.

2.4.1.4 Communication patterns

Shaw et al. (2004b) examined the communication patterns used by vets during consults and reported a much higher frequency of biomedical talk (talking about the problem in a medical way) compared with psychosocial/lifestyle talk (rapport and relationship-building talk). This is supported by McDermott (2018) who reported that vets spent more time gathering information and explaining than empathising or soliciting client input. Interestingly, Shaw et al. (2004b) found that appointments during which the vet spent time building rapport were on average 1.5 minutes shorter than the appointments which contained only biomedical talk. Medical research has shown that the use of medical talk is fine for single, simple problems, however the blocking of, or ignorance to, “lifeworld” talk from the patient has been shown to lead to the poorest patient outcomes (Barry et al., 2001).

Subsequent research from Shaw et al. (2006) found that the communication pattern used by vets was dictated by the consult type, but that in general many vets (46%) use a predominately biomedical pattern, some (38%) use a mixed pattern and few (16%) use a predominately bio-lifestyle-social communication pattern.

Roshier and McBride (2013b) examined video recorded booster consults and reported that vets tended to lead medical, husbandry and cost conversations. However, behaviour discussions were managed poorly, with behaviour concerns reported by the client often ignored by the vet. When they were discussed, behaviour conversations were

instigated equally by the client and vet. However, the limitations of this study should not be ignored, in particular the opportunistic sampling strategy and small sample size.

The Communication patterns of farm animal veterinary surgeons have also been investigated. Bard et al. (2017) utilised 15 simulated consults to describe the communication patterns of farm animal vets, concluding that they primarily used a paternalistic style in their consultations with their communication strategy to be rooted in the style of the Calgary-Cambridge Model of communication (Radford et al., 2006). Ritter et al. (2018b) analysed 21 video-recorded farm animal consultations with RIAS, reporting that the vets generally spent large portions of their time relationship-building and giving advice with the minimal use of open questions.

Ritter et al. (2018b, 2018a) also showed communication to vary between vets and between visits; whilst these papers describe vets whose communication skills do not follow the currently taught models, there was a considerable focus of the vets on relationship building. Further research examining outcome measures such as satisfaction or production would be useful in assessing these consultations further.

It is important to note that the findings of Bard et al. (2017) and Ritter et al. (2018b, 2018a) are contradictory, but this may be due to the sample population or differing geographies. However, the use of real world,

rather than simulated, interactions provides more authority to the findings of Ritter et al. (2018b) than to those of Bard et al. (2017).

2.4.1.5 Communication skills teaching

As previously stated, undergraduate consultation skills teaching focuses on the Calgary-Cambridge model adapted for veterinary medicine (Radford et al., 2006) which is taught across all UK vet schools (Mossop et al., 2015) and also taught commonly in the US and Canada. The use of experiential learning has been shown to improve veterinary student confidence in client communication (Barron et al., 2017) and teaching communication skills to veterinary students has been shown to improve their communication abilities (Latham and Morris, 2007).

Root Kustritz et al. (2017) assessed current veterinary student communication competencies during their clinical rotations. They reported that students communicated well when opening the consult and gathering information. In addition, they scored well at using appropriate and straightforward language with clients. However, they had several ‘weaker’ areas including financial discussions, ensuring that all of a client’s concerns had been addressed, summarizing and making confident recommendations. Unfortunately, there was no follow-up detailing how the students performed in their rotations following individual feedback, or how it affected their communication competencies as practitioners. However, it does highlight areas in which communication skills teaching could be strengthened.

A patient-centred care (PCC) approach to communication has been shown to be central to the delivery of effective care (Grol et al., 1990; Levenstein et al., 1986). There is no single definition of patient-centred care (Mead and Bower, 2002), but common themes have been identified; shared decision making (SDM), the relationship between the physician and patient (relationship-centred care), and the setting of where care is delivered (Kitson et al., 2013). However the principles of PCC do not feature widely in communication skills teaching; only 7% of publications identified in a systematic review of all healthcare professions reported using PCC as their theoretical basis (Denniston et al., 2017).

A Best Evidence Medical Education (BEME) Systematic Review highlighted the strong evidence for communication as a veterinary graduate skill (Cake et al., 2016). However, the same review found less evidence to support other non-professional competencies such as the use of relationship-centred care and empathy. It must be noted that these findings merely indicate the limited research in the field rather than the actual importance of these non-technical skills. The next subsection reviews the literature in this area.

2.4.2 Rapport and relationship building

Rapport and relationship building are viewed as fundamental to the vet-client interaction (Best, 2015; Kanji et al., 2012; Kleen et al., 2011; Lue

et al., 2008). Rapport and relationship building are separate but interlinked concepts, which are primarily affective in nature.

Rapport is defined as “A close and harmonious relationship in which the people or groups concerned understand each other's feelings or ideas and communicate well” (Oxford English Dictionary, 2014). It could be argued that rapport is the superficial process of demonstrating a mutual understanding between a vet and client during the consultation to gather information and build trust. However, relationship building encompasses the foundation of a more in-depth relationship, developed through rapport, an understanding of a client’s ideas and expectations, and time.

2.4.2.1 Empathy

The terms empathy and sympathy are sometimes confused, but it is important to acknowledge their differences. The Oxford English Dictionary defines empathy as “the ability to understand and share the feelings of another”. This differs to sympathy which is defined as “feelings of pity and sorrow for someone else’s misfortune” (Oxford English Dictionary, 2014).

Empathy develops the vet-client relationship and builds trust (Adams and Frankel, 2007). This is supported by findings reported by Grand et al. (2013) who found that trust in vets is based not just on their technical skills but also on their professionalism. In addition, client satisfaction

with consults has been shown to be higher when a vet makes empathic statements towards the client (McArthur and Fitzgerald, 2013).

Empathy is an important characteristic for any practitioner, not only for developing trust and relationships through good communication, but also because it has been shown that decreased physician empathy correlates with increased medical errors (West et al., 2006). Furthermore, displays of empathy have also been shown to reduce the likelihood of a medical malpractice claim (Lester and Smith, 1993). This could be due to the fact that warmth and competence are both important facets of social judgement. Interestingly, warmth is judged before competence, and warmth judgments carry more weight in an individuals' reaction to another (Fiske et al., 2007). To paraphrase: care is more important than knowledge in a person's judgement of another. That is not to say that knowledge or technical competence is not important, just that if that knowledge is delivered without empathy or warmth, then trust in that person's competence is reduced.

However, the opportunity to express empathy is often missed by medical (Suchman et al., 1997) and veterinary (Shaw et al., 2004b) clinicians alike, with empathy only expressed in 7% of the consults analysed by Shaw et al. (2004b). Subsequent research from McArthur and Fitzgerald (2013) found that although statements of reassurance were made in the majority of consults, empathy statements towards the client or animal were only expressed in 41% of consults. This seeming

improvement could be due to communication skills being more widely taught in the interim, due to differing geographies, or due to a difference in the tools used to measure empathy.

Empathy can be demonstrated between the vet and the client but also between the vet and the pet. Displays of empathy by the vet towards the pet are often take the form of “I Know…” particularly in response to a pet’s discomfort or distress during a physical examination (MacMartin et al., 2014). Interestingly, empathy has also been correlated with pain assessment; with those vets attributing a higher pain score also having a higher human-focussed empathy score (Norring et al., 2014). This suggests that empathy levels are also important for animal welfare, as well as increasing trust and satisfaction, and reducing litigation.

Schoenfeld-Tacher et al. (2017) looked at empathy levels in vets and found no difference in perspective taking and empathic concern demonstrated by experienced or recently qualified vets. However, they did note a decline in fantasy scores (how likely the vet was to imagine future worst-case scenarios) in more experienced vets. This research has implications for patient centred care and could suggest that empathy is a trait that is innate to an individual’s personality. Unfortunately, this research does not track change over time, so the findings may represent a difference in training or differences in the personalities of recent graduates when compared with experienced vets.

2.4.2.2 Trust

It has been established that trust is fundamental in the doctor-patient relationship (Hall et al., 2001) and high levels of trust have been linked with medication adherence (Berry et al., 2008). It follows that the vet-client relationship would be no different. However, trust is a multifaceted and complex paradigm with no single definition (Pearson and Raeke, 2000).

Trust in the veterinary profession is high with 94% of respondents to the Vet Futures survey reporting that they either generally or completely trusted vets (Vet Futures Project Board, 2015c). However, empirical research into trust and the role it plays in the vet-client relationship is limited. Grand et al. (2013) identified “technical candour” and “professionalism” as two constructs which were important contributors to veterinary client trust. This is supported by Mossop (2012) who found that trust was one of many components of veterinary professionalism which also included technical competence, empathy, confidence and communication skills. Furthermore, Brown (2018) reported that client satisfaction with a vet’s communication skills predicted client-vet trust.

Baker et al. (2003) examined doctor continuity and trust and their impact on the satisfaction of patients visiting general practices in the UK and US. They reported that a highly trusting patient, seeing their usual GP reported the highest levels of satisfaction following a consultation. Furthermore, patients who did not trust their usual doctor reported

similar post-consult satisfaction levels, whether there was continuity or not.

Gabay (2015) proposed that trust in a physician was influenced by a participative communication style, eliciting the patient's ideas and concerns, and the patient feeling in control of decisions relating to their health. This is supported by findings from a narrative review examining trust in a physician which found the behaviour and personality of the doctor to be a consistent predictor of patient trust (Hall et al., 2001).

2.4.2.3 Relationship-centred care

As discussed previously, RCC is the concept that the relationship between physician and patient should consider the individuality of each participant in the exchange, recognise that feelings are a vital factor and understand that the relationship is under mutual influence (Beach et al., 2006). To paraphrase, RCC is the use of a collaborative and bespoke approach to decision-making, centred on the individual.

Lue et al. (2008) emphasised the importance of each stakeholder relationship with their findings that client-pet and client-vet relationships impact on patient care. Furthermore, Kanji et al. (2012) found that a more relationship-centred approach lead to improved adherence with surgery and dentistry recommendations.

Küper and Merle (2019) reported that the use of a relationship-centred approach, in conjunction with expressions of empathy, reduced a client's demand for information from alternative sources such as the internet. Finally, continuity of care has been raised as important to many clients (Belshaw et al., 2018b), providing further support for the use of RCC in veterinary consultations.

2.4.3 Physical exam

A physical examination has been shown to be important for detecting underlying disease (Davies, 2012) with 52% of animals examined when presented for vaccination having concurrent disease (Banyard, 1998). Physical examinations are very commonly performed in small animal consults with all consultations assessed by Everitt et al. (2013) and 92% of those assessed by Robinson et al. (2015b) including some form of physical examination.

In the veterinary consultation, a thorough clinical exam is an important part of the information gathering process, and is considered by many to be of equal, if not increased, importance to the verbal information gathering process. Indeed, a telemedicine trial recently proposed by the RCVS has been postponed due to numerous animal welfare concerns including but not limited to the provision of 24/7 emergency care and the prescription of prescription only medications (POMs) without a physical examination (Anonymous, 2018b). A review of RCVS guidance

on 24-hour care and the definition of ‘under veterinary care’ is now underway (Anonymous, 2019).

The quality of the physical examination performed was assessed by Robinson et al. (2015b) and reported to be “full” (defined as an assessment of the animal’s condition, examination of the eyes/ears/mouth, auscultation of the chest and palpation of the abdomen) in 58.9% of dogs and 70% of cats and “focused” (exam focused on a single body system) in 32.8% of dogs and 23.7 % of cats. Furthermore, the depth of physical exam performed varied depending on the type of consultation with a full clinical exam more likely to be performed in a first or preventative medicine consult (59.3% and 90.9% respectively) than during a revisit (35.5%). The reasons for not performing a full clinical exam were postulated to be feasibility-related, e.g. patient amenability (Robinson et al., 2015b). However, the actual reasons for performing a full versus focussed physical examination were not recorded.

2.4.4 Decision making

The terms decision-making and clinical reasoning are often used interchangeably, however for the purpose of this thesis, they will be used to describe distinct processes.

Clinical reasoning is the cognitive process undertaken by a clinician to analyse the available information to reach a diagnosis (Sackett et al.,

1985). Clinical reasoning strategies can be split into two types: analytic (also known as hypothetico-deductive reasoning) and non-analytic (often referred to as pattern recognition) (Eva, 2005). Factors contributing to the clinical reasoning process are likely to include the patient history, clinical examination findings and diagnostic test results, with the clinician analysing each component to ‘funnel’ their thinking towards a diagnosis. Furthermore, these clinical reasoning strategies should not be used exclusively; indeed parallel use of analytic and non-analytic strategies has been shown to improve diagnostic accuracy (Eva et al., 2007).

However, the decisions made in any consultation are complex, are not necessarily rational and are affected by various cognitive biases (Tversky and Kahneman, 1974). Complicating matters further, a judgement must be made by the clinician, not only based on the likelihood of a particular diagnosis but also on the significance or cost to the patient of a missed diagnosis.

Much of the research into clinical reasoning has been conductd in human healthcare. However, Vandeweerd et al. (2012) reported that veterinary surgeons also use both analytic and non-analytic clinical reasoning strategies. Subsequently, the authors proposed five steps in the veterinary decision-making process: a rapid initial decision by the vet, the communication of that decision with the client, an evaluation of the initial decision, the formulation of a new decision where necessary

and finally, legitimization of the decision. Futhermore, they identified three influencing factors; the case itself, as well as vet and client contexts.

Lue et al. (2008) reported that decisions about veterinary care were not made solely on cost. Furthermore, Brockman et al. (2008) found that the emotional attachment of the individual client to their pet affected owner decisions in high cost situations, with a high attachment leading to a more emotionally driven, rather than objective decision. This is in line with the “risk as feelings” hypothesis proposed by Loewenstein et al. (2001) which argues that decision making is affective in nature, rather than cognitive, particularly in stressful situations.

Redelmeier et al. (1993) discussed the difficulties faced by patients when making decisions, arguing that decisions can be influenced not only by how they are communicated, but the attribution of a binary construct to risk. Further complicating the decision-making in the veterinary consult is that a client must make a decision on the animal’s behalf. Research has shown that people are more risk averse when making a decision by proxy than if they were making a decision for themselves (Garcia-Retamero and Galesic, 2012; Stone et al., 2002). It follows that a client could be more risk averse when making decisions regarding their pet’s health.

The framework proposed by Vandeweerd et al. (2012), along with the findings of Redelmeier et al. (1993), Garcia-Retamero and Galesic (2012), Stone et al. (2002) and Brockman et al. (2008) identify that the decision-making processes of the consultation extend far beyond the traditional, biomedical perspective; that decision-making is synonymous with clinical reasoning. Whilst the clinical aspects of the consultation are certainly of influence, this thesis will examine an alternative perspective.

To this end, in the context of this thesis, the term decision making will be used to describe the discourse between vet and client, contextual influences, and the balance of power within the interaction, rather than the cognitive process of clinical reasoning.

2.4.4.1 Types of decision making

There is a spectrum of approaches to clinical decision making. Roter and Hall (2006), adapted for veterinary surgeons by Adams and Kurtz (2017), described four models of veterinary decision making based on the level of vet and client control: paternalistic, consumerism, default and mutuality (Table 1).

Table 1: Decision making models, reproduced from Adams and Kurtz (2017)

Model	Level of vet control	Level of client control
Paternalistic	High	Low
Consumerism	Low	High
Default	Low	Low
Mutuality	High	High

Charles et al. (1997) proposed three decision making models; Paternalism (vet in control), Informed choice, also known as autonomy (client makes the decision) and Shared decision-making (SDM) (Figure 7).

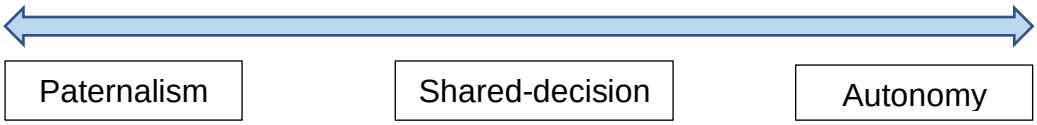


Figure 7: *Decision-making models, as described by Charles et al.* (1997)

Cornell and Kopcha (2007) term the decision making roles “Guardian”, “Teacher” and “Collaborator” (see Table 2) but the three roles adhere very closely to those described by Charles et al. (1997).

***Table 2: Roles in decision making, reproduced from Cornell and Kopcha* (2007)**

Stages	**Guardian**	**Teacher**	**Collaborator**
Acquiring knowledge	All information provided by the vet	Client obtains information from the vet but also from many other sources	Medical information provided by vet; relevant to preferences of client provided by client
Verbal dominance	Conversation dominated by the vet	Conversation dominated by the vet	Shared decision-making power; vet and client are approximately equal in the conversation
Elucidation of options	Typically, only the option the vet feels is best is presented	All options are presented but no weight given to vet treatment preferences	All options are given; preference of vet and client are provided
Decision making	Vet is the primary decision maker	Client is the primary decision maker	Shared decision making between client and vet.

The choice of decision-making model depends on physician and patient preference, and circumstance (Roter et al., 1997). In addition, it is important to note that while the majority of patients do desire information to facilitate decision making, it is vital to ensure that the information is presented appropriately for that individual (Deber, 1994). However, as discussed previously, shared decision making is an integral element of patient-centred care (Grol et al., 1990; Levenstein et al., 1986).

Levinson et al. (2005) examined the medical decision-making preferences in a sample of the US population and found that whilst the majority of respondents (96%) wished to be asked their opinion and given choice, their preference for participation in a final decision varied considerably. While Gulbrandsen et al. (2016) postulated that patients seeking healthcare information can be vulnerable, altering their capacity for autonomy and leading to uncertainty, which could be exacerbated by an imbalance of power and/or trust.

There has been minimal research examining veterinary client preference when it comes to the level of veterinary surgeon involvement in decision-making. However, the limited research has shown that clients do want to be involved in making decisions (Coe et al., 2008). Furthermore Show and Englar (2018) showed that the majority of pet owners (76.3% of dog owners and 71.8% of cat owners) “expected an equal say” in those decisions, in a partnership with the vet. However, it

should be noted that this study was performed in the US and was limited by a non-representative sample. It is unclear how generalisable these findings are to a UK client population.

Shared decision-making has been linked to improved patient outcomes in medical literature (Stewart, 1984). It is important to note that despite improved outcomes, and patients' strong desire for shared decision-making, there are several barriers to achieving it. These barriers include a lack of time and the perceived difficulty of integrating SDM into the consult (Elwyn et al., 2017), the "authoritarian" nature of some clinicians, and patients not wanting to be labelled as a "difficult" (Frosch et al., 2012). All of these concerns could equally be applied to the veterinary context.

2.4.4.2 Making recommendations

How a question is framed has been shown to influence the quality and completeness of the information gathered during history-taking (MacMartin et al., 2015). Furthermore, the medical terminology used about a diagnosis has been shown to affect a patient's treatment choice, with the use of a more medical term leading to an increase in patient preference for a more invasive option (Nickel et al., 2017). It follows that communication strategies can greatly influence decision making.

Kanji et al. (2012) examined the strength of recommendations made and how that affected client adherence to surgery and dentistry; clients were seven times more likely to adhere to a clear recommendation from their vet when compared with an ambiguous one.

MacMartin et al. (2018) used conversation analysis to examine the actual language used by vets when making nutritional recommendations. The study found that vets initiated their recommendations throughout the consult, rather than as part of a linear treatment planning section. In addition, the authors reported variation in the strength of the recommendations made with most vets moderating their proposal with “mitigating language” rather than making a strongly worded recommendation. This could be due to concerns from the vet about damage to the vet-client relationship or confusion around decision-making – that giving a clear recommendation could be construed as paternalism.

Bard et al. (2017) suggest the use of motivational interviewing (MI) as a means to achieve a behaviour change of the client through a shared-decision partnership. MI, developed by Rollnick and Miller (1995), is a communication technique, developed for human medicine, which enables a physician to use behavioural psychology to encourage a patient to make the change from a risky behaviour to a health-enhancing one (e.g. giving up smoking). Whilst this study uses a very small sample with low validity, it provides an interesting foundation to

the use of MI techniques in veterinary medicine. However, stronger evidence would be required before the application of MI techniques to consultation teaching could be recommended. Whilst the authors claim that MI allows for a shared decision, it could be argued that it in fact flips the consult dynamic between paternalism and client autonomy, rather than a collaborative middle ground of a truly shared decision; the patient is encouraged to take control of their own motivations for change, driven by a physician with their own, personal motivations.

2.4.4.3 Consent

Consent is a necessary process before a decision can be implemented and it should be informed. In order for informed consent to be gained, the discussion must cover numerous facets, namely: diagnosis or nature of the illness, treatment plan including alternatives, risks involved, likelihood of success, prognosis if treatment is refused and costs of treatment (Flemming and Scott, 2004).

The RCVS guide to professional conduct, states that informed consent:

> "*can only be given by a client who has had the opportunity to consider a range of reasonable treatment options (including euthanasia), with associated fee estimates, and had the significance and main risks explained to them*" (Royal College of Veterinary Surgeons, 2012).

Gray et al. (2018) postulated that consent in companion animal practice mirrors that of paediatric medicine, due to the triadic dynamic. However, legally an animal is considered the client's property and so a certain amount of client autonomy is present. The authors go on to argue that animal welfare should remain the primary concern of the vet and that any welfare compromise should be the point at which the vet can override client autonomy.

2.4.5 Discussion of costs

Mellanby et al. (2011) identified that clarity around treatment cost factored highly for small animal veterinary clients, and the financial aspect of the veterinary consultation is a key differentiator from medical consultations in the UK. The open discussion of cost presents a challenge to both clients and veterinary surgeons as vets must balance business concerns whilst remaining a caring professional (Coe et al., 2007). Adams and Frankel (2007) postulated that the predilection for a disease-based approach to the consult from the vet, coupled with financial constraints could contribute to vet-client relationships which do not meet a client's expectations. In addition, the majority (57%) of vets responding to a survey by Kipperman et al. (2017) reported that financial limitations limited their ability to administer optimal patient care.

Coe et al. (2009) examined discussions of cost in small animal consults, finding that only 29% of the consults studied contained financial

discussions and of those discussions, the majority focussed on the actual cost of time or services rather than their value. The authors also found that cost discussions significantly increased the length of a consult.

A report issued by the BVA (2017) based on the “BVA Voice of the Veterinary Profession Survey” described the majority of vets (89%) treating companion animals having had a threatening experience with clients at some point during their career and almost all (98%) having felt pressure to reduce or waive fees. Cost discussions can be difficult, and this report highlights their importance, alongside the need to offer options to clients in order to reach a shared decision. As previously highlighted, this survey was distributed to BVA panel members, comprised of UK-based members of the BVA. Whilst these results are troubling, care should be taken not to over generalise, due to the small sample size and self-selection meaning that the respondents may not be fully representative of the veterinary profession in the UK.

2.4.6 Adherence

Adherence, with recommendations or medication is critical to achieving optimal patient health outcomes. Historically, the terms adherence, concordance, and compliance were used interchangeably. However, the term compliance is now thought to hold paternalistic connotations - suggesting that a client has wilfully chosen not to comply with the recommended course of treatment (Aronson, 2007). Adherence, a

measure of how well a treatment plan was adhered to, is now considered the correct term. However, please note that the term compliance has occasionally been used within this thesis when reporting outcomes described by other research, for the reason that this is the term used by the authors of those manuscripts.

Limited evidence is available regarding factors which affect adherence in veterinary medicine, with all studies identified in a systematic review examining short-term adherence, the majority of which was with antimicrobials (Wareham et al., 2018). The systematic review was unable to draw any meaningful conclusions regarding factors affecting adherence due to the quality of the studies, the measurements used and the range of factors which could affect it. Factors considered to affect adherence were complex and sometimes contradictory across publications but included dosing regimen (Adams et al., 2005), ease of administration (Boda et al., 2011), a client feeling that the vet spent enough time with them in the consultation (Grave and Tanem, 1999) and home and/or work situation of the client (Adams et al., 2005; Bomzon, 1978). Furthermore, Lamb et al. (2018) reported the level of trust in the advice given and worries about interference causing distress to their pet were additional factors affecting a client's adherence with behavioural advice.

Kanji et al. (2012) reported an association between client satisfaction and adherence and also relationship-centred care and adherence.

Eliciting client concerns prior to prescribing or making recommendations and using a relationship centred care approach to the consult could help to promote adherence and improve subsequent health outcomes.

2.5 What is a good consult?

One of the primary research questions of this thesis is to create a definition of a good consultation. In a study of six GPs, Andersson and Mattsson (1994) used post consultation questionnaires to investigate the effects of consultation length, communication and the type of problem on whether a consult was deemed 'good' or not by the patient. They reported that the individual doctor was the most important factor for achieving a good consult and that the length of the consult and patient continuity had no effect. However, this is a very small study and so very limited conclusions may be drawn. Arborelius and Bremberg (1992) reported that successful consults were those where the doctor and patient elicited the patient's concerns and ideas, leading to a shared understanding and patient involvement in the treatment.

To date there has been minimal research into what constitutes a 'good' veterinary consult, with a successful consult defined as one with a subjectively favourable outcome. Descriptive factors of the consult could be related to its success e.g. its length, the presence of a full physical examination, relationship building or reaching a shared decision. Furthermore, the success of a consultation could be measured using outcomes such as client satisfaction, veterinary

surgeon perception, patient outcomes, compliance or financial aspects. Chapter four will report the findings of a systematic review examining measurements of success in small animal specific health problem consults.

2.5.1 The bad consult

When investigating what factors make a consultation ‘good’, the ‘bad’ consult should also be considered. It could be assumed that the bad consult is just the opposite of a good or successful one. However, this would be an oversimplification. If a good consultation is one which is subjectively favourable, the question must be raised: favourable for which stakeholder? A consultation could only be considered truly successful if the needs of all stakeholders are met. In her thesis, Mossop (2012) defined professionalism as “*the balance of client expectations, the animal patient and responsibility to the veterinary profession*”. It follows that a successful consultation should be one which balances the requirements of all stakeholders; animal, client, vet and business. Thus, the bad consult could be any consult in which the needs of any of the individual stakeholders fail to be met. It is with this framework that all client interactions should be assessed as a minimum. However Roman (2009) argued this point further, stating that vets have a both a social and moral responsibility which was not mutually exclusive to financial success; attainable through “good business” and as a route to good client relationships and trust.

2.5.2 Assessing the consult

In order to assess how good or bad a consult is, it must undergo some form of measurement, be that objective or subjective, however there is negligible literature defining the classification of consultation assessment methodologies.

Ziebland et al. (2013) divided methodologies into quantitative methods (e.g. surveys) and qualitative methods (e.g. observation of some kind). However, it can be argued that these definitions are too simplistic. For example, a consult may be observed but analysed with a coding framework which is essentially quantitative, such as RIAS.

Robinson (2014) divided consultation assessment methodologies into two categories; direct and indirect. Direct measurement was classified as the direct observation of the paradigm being measured, in this case the consultation. Direct observation can occur in real-time for example a researcher in attendance during the consultation, or via a pre-recorded videotape or audiotape. The data can then be analysed via an objective framework to assess outcomes and therefore a measurement of success. Indirect measurement is the quantification of the consultation via the measurement of something else; for example, with questionnaires or Likert scales to assess an individual stakeholder's perceptions and experiences or by the use of patient records. There are advantages and disadvantages to each method, and it is important to consider the subjective nature of some of the indirect outcome

measures. For example, client satisfaction could reflect whether the veterinary surgeon has met that client's expectations, rather than if the optimum outcome has been achieved for the patient. Indeed, Jerant et al. (2018) found that if a physician denied a patient's request for a particular treatment or test (referral, analgesia, new medication and clinical pathology), then patient satisfaction was decreased. In addition, it is important to be aware of the various limitations inherent in each observation method. For example, in-consult observation may create a different dynamic and interaction between the vet and the client when compared to video recording. However, an altered interaction is also possible when using a recording methodology.

2.5.2.1 Patient-based outcome measures

The triadic nature of the consultation means that patient-based outcome measures (PBOM) must be measured by proxy. In the human medical literature, a PBOM is an overarching term to describe the assessment of a healthcare intervention from the patient's perspective as an end-point to a clinical trial (Fitzpatrick et al., 1998). PBOMs have been shown to have minimal influence on clinical decision making as the focus is on whether the intervention works, rather than how it may lead to the anticipated outcomes (Greenhalgh et al., 2005). Unfortunately, PBOMs by proxy have yet to be correlated with favourable medical outcomes from the viewpoint of the animal patient.

2.5.2.2 Satisfaction

Whether key stakeholders in the consultation are satisfied at the end of the consult is one way of measuring its success. Whilst it is not possible to measure how satisfied the animal patient is, an assessment of client and/or veterinary surgeon satisfaction is very achievable. Measuring satisfaction is relatively quick and easy to achieve, however it does have limitations; surveys have been shown to overestimate satisfaction (Williams et al., 1998). This could be due to the subjective interpretation of satisfaction, or the differences of individual stakeholders expectations (Collins and O'Cathain, 2003). Further complicating the use of a satisfaction measure is the individual complexity and subjectivity of the rater (Salisbury et al., 2010). This must be borne in mind when assessing the validity of satisfaction questionnaires.

2.5.2.2.1 Client satisfaction

Numerous patient satisfaction questionnaires are available for use in medicine (Batbaatar et al., 2017; Mead and Bower, 2002). The tools available range from complex multi-questioned surveys, to a sole question, used as a global measure of customer satisfaction (Zhang et al., 2007). However, there is no single, accepted measurement tool. Rating scales using a series of 'smiley faces' to assess service-user satisfaction have also been widely used, across numerous fields, including healthcare, via companies such as Happy or Not[2]. The

[2] Happy or not (https://www.happy-or-not.com) are a provider of customer satisfaction reporting, utilising a four-point graphic scale of smiley faces at the point of service across numerous fields including aviation, hospitality and human healthcare.

benefits to utilising these simple and short tools include improved ease of administration, accessibility (Stange et al., 2018) and response rates (Edwards et al., 2009). Indeed, some of these tools have been compared to longform satisfaction surveys and found to be both valid and reliable measures of satisfaction in a human primary care setting (Salisbury et al., 2010). However, to the authors knowledge, there have been no graphic scales validated for veterinary client satisfaction.

In veterinary medicine, many of the medical satisfaction tools could be applied. However there is a 15-point, appointment-specific, companion animal client satisfaction questionnaire (CSQ) (Coe et al., 2010) which has been validated for assessing veterinary client satisfaction with consults. In addition, there is a “Veterinary Service Satisfaction Questionnaire” (VSSQ) (Woodcock and Barleggs, 2005) which examines wider aspects of the customer experience, as well as the consult experience. However, at 72 questions, the VSSQ is more time consuming to administer and some questions are only relevant to certain client subsets, meaning numerous questions are often not applicable. To this end, it is less widely known than the CSQ.

Whilst patient satisfaction is an important outcome measure, it is also important to ensure that investigations and treatments are clinically appropriate, especially in light of consent by proxy and animal welfare.

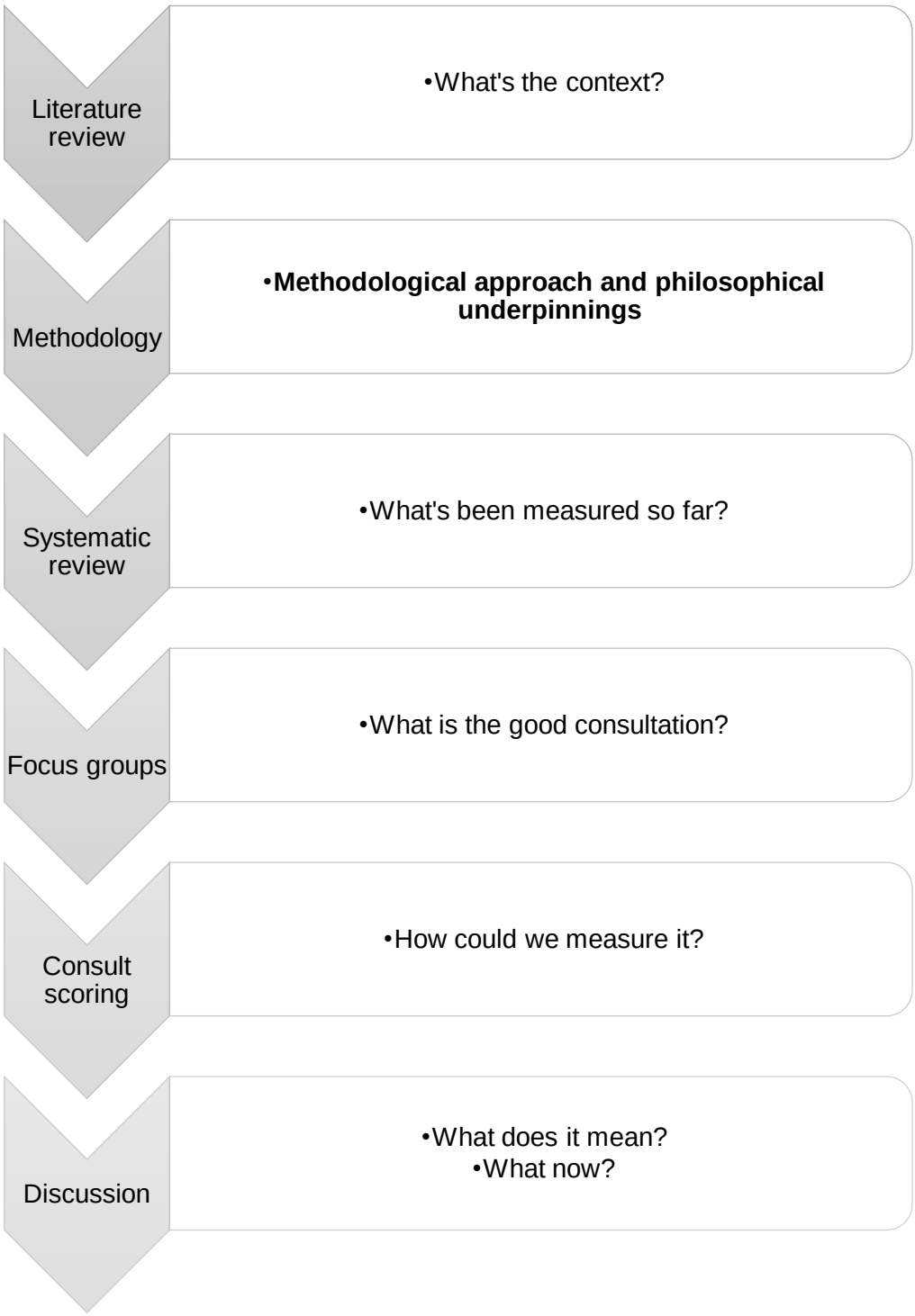
2.5.2.2.2 Vet Satisfaction

Shaw et al. (2012a) developed a tool to measure the satisfaction of the vet, based upon the physician satisfaction scale (Suchman et al., 1993). Shaw et al. (2012a) found that vets were generally satisfied with their consults, but scores for preventative medicine consults were higher than those for specific health problem consults. In addition, they reported that vet satisfaction was affected by the communication in the consult, the self-esteem of the vet and their levels of empathy.

2.6 Conclusion

This chapter has provided the context for this thesis, identifying key literature examining veterinary consultations, consult stakeholders, communication and decision-making. This chapter has highlighted that veterinary medicine is increasingly a service industry, requiring greater emphasis on the client perspective. This is important in light of the rapidly changing profession to ensure that client and veterinary expectations and agendas remain collaborative and non-divergent. A more in-depth appraisal of the literature examining small animal, health problem consultations will be undertaken in chapter four. The next chapter will examine the methodological underpinning for this thesis.

3 Methodology



This chapter introduces the methodological and philosophical underpinnings for this thesis, including quantitative, qualitative and mixed methodologies, and evidence-based medicine (EBM), as the principles are fundamental and applicable to all research methodologies.

3.1 Epistemology and Ontology

A theory is the framework or lens through which research is planned and effected (Creswell and Creswell, 2017; Kielmann et al., 2012). Silverman and Marvasti (2008) categorised theories into formal and informal. Formal theories are based on ways of thinking (e.g. Constructivism) whilst informal theories are based upon experience (e.g. a vet's theory about their out of hours caseload).

In order to select the correct methodology for a study, an understanding of its theoretical perspective and the researchers own epistemology and ontology is necessary. A diagrammatic representation of the relationship between each aspect of the qualitative research process is shown in Figure 8.

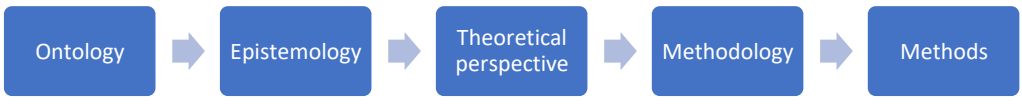


Figure 8: *Relationships between aspects of the qualitative research process* (Moriarty, 2016)

The term ‘ontology’ relates to theories about the nature of reality (Braun and Clarke, 2006; Moon and Blackman, 2014). Numerous theories exist, but ontological positions can be described on a continuum between realism and relativism. The realist ontology is that one reality or truth exists and it can be investigated through research, whilst the relativist ontology is that reality is a human or social construction and is therefore subjective and ever changing (Moon and Blackman, 2014).

‘Epistemology’ is concerned with what constitutes valid knowledge (Braun and Clarke, 2013), and again, there are numerous epistemological positions. However, in the simplest terms, epistemology can be viewed as a division or as a continuum between objectivity and subjectivity (Moon and Blackman, 2014).

Finally, the theoretical perspective of a researcher is their guiding research philosophy with theoretical perspectives being described as the continuum between positivism and post-modernism (Moon and Blackman, 2014). Figure 9 illustrates the interconnected nature of ontology, epistemology and theoretical perspective.

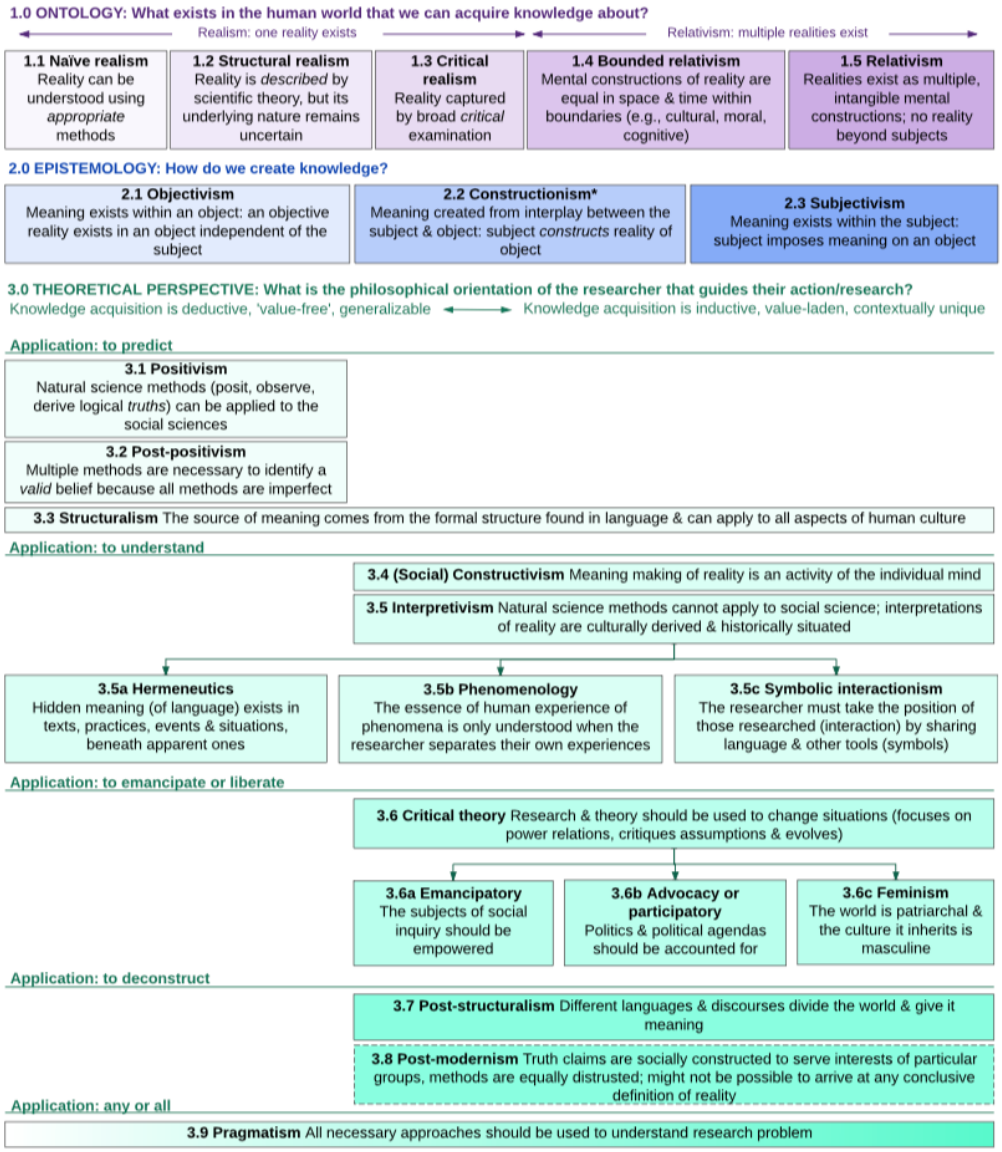


Figure 9: *The interconnected and multidimensional nature of ontology, epistemology and theoretical perspective, reproduced from Moon and Blackman* (2014)

3.1.1 The epistemological, ontological, and theoretical perspective for this thesis

This thesis has been written with a structural realist ontology and a post-positivistic theoretical perspective. This philosophy reasons that the methods used in this thesis (both quantitative and qualitative) are an attempt to study reality and represent it, rather than to attain the absolute truth.

Post-positivism argues that multiple methodological approaches may need to be employed, in order to reach a valid answer to the research question, as to a certain extent, all research methods are imperfect. To this end, a mixed methods approach has been adopted for this thesis, reflecting this philosophy.

3.2 Mixed methods research

Mixed methods research uses both quantitative and qualitative research methods to answer the research question, with the goal being to maximise the strengths of each approach, and to minimise any methodological limitations associated with performing a single faceted study (Johnson and Onwuegbuzie, 2004). The use of both approaches can facilitate a more in-depth understanding of broad and/or complicated research questions and can also be useful to develop hypotheses, select appropriate outcome measures, develop research tools, optimise the research process and to investigate implementation opportunities and barriers (Lewin et al., 2009). Moreover, quantitative and qualitative approaches to sampling, data collection and analysis can be employed concurrently or sequentially, in an equal fashion or with one taking priority (Sandelowski, 2000).

However, many studies claiming to be using a mixed methods approach fail to integrate the qualitative and quantitative findings during their analysis and interpretation (Lewin et al., 2009), with the authors also reporting that the quality of the qualitative component was highly

variable. To this end, it is important to ensure that each aspect of a mixed methods study is well-designed, and the results integrated, to maximise the benefits of performing mixed methods research.

One key strength of mixed methods research is its usefulness in research development; using the data collected by one method to inform the methods of a subsequent study (Sandelowski, 2000). To this end, through the triangulation of the results from the three distinct studies of this thesis, a validity argument will be made to support the overall thesis findings.

The systematic review will be utilised to identify what has been measured previously in small animal, health problem consultations, assessing validity and reliability of the tools and highlighting knowledge gaps. Subsequently, Chapter 5 will use qualitative methods to understand stakeholder perceptions and expectations of small animal consultations, addressing the first research question of this thesis; ‘What is the definition of a good consultation?’. Finally, Chapter 6 will utilise the results of the systematic review and the focus groups study to inform the approach, answering the second research question; ‘How could we measure the good consultation?’. Figure 10 details an overview of the studies performed for this thesis and their methodological basis.

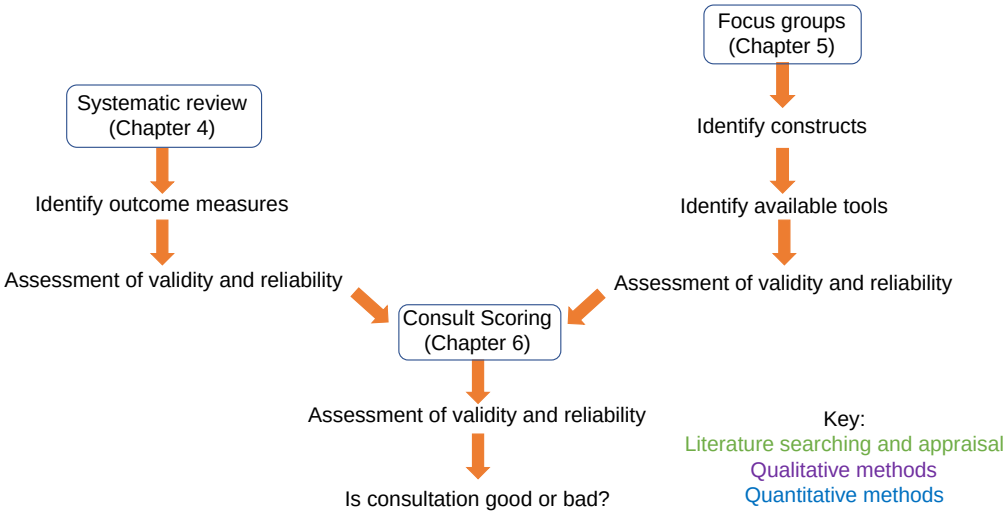


Figure 10: *Studies performed for this thesis, their relationships, and their methodological backgrounds*

The remainder of this chapter examines the literature on the research methodologies employed in this thesis and sets out the validity argument for the findings through triangulation, utilising Kane's validity framework (Kane, 2001).

3.3 Evidence-based medicine

The practice of EBM is defined as the "*conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients…integrating individual clinical expertise with the best available external clinical evidence from systematic research*" (Sackett et al., 1996). EBM is important because it combines scientific fact with situational realities to allow a clinician to formulate a suitable decision.

3.3.1 Evidence-based veterinary medicine

Evidence-based veterinary medicine (EVM) has been defined as the application of EBM principles to the veterinary field and *"…the use of current best evidence in making clinical decisions*" (Cockcroft and Holmes, 2008). It has become increasingly acknowledged throughout the veterinary profession (Dean, 2013), in no small part due to the work of the Centre for Evidence-based Veterinary Medicine[3] and RCVS knowledge[4].

With regards to this thesis, a systematic review forms the first research chapter, therefore a basic narrative of EBM principles was considered relevant and important. Furthermore, EBM principles can be readily applied across any, and all, healthcare fields, and be applied to any methodology. To this end, the terms EBM and EVM are used interchangeably throughout this thesis.

3.3.2 EBM concepts

Dean (2013) described five stages for practicing EVM. Firstly, the design of a question which is both relevant and answerable, the acquisition of relevant literature, systematic and unbiased appraisal of the acquired evidence, application of the evidence to clinical practice

[3] Centre for Evidence-based Veterinary Medicine is a research group based at the School of Veterinary Medicine and Science at the University of Nottingham. Their aim is to increase the awareness and use of EBM in the veterinary profession

[4] RCVS Knowledge is the charity partner of the RCVS. Their aim is to further the use of EBVM and champion quality improvement

and finally, an assessment of the effect of evidence implementation. Evidence can be defined as anything which adds to the knowledge of a subject, for example a scientific study or indeed an expert's opinion, however not all evidence is viewed as 'equal'.

The steps described above provide a basic guide to acquiring relevant scientific evidence. However, Sackett et al. (1996) described two additional concepts fundamental to the practice of EBM, which are often overlooked; that the patients' values and preferences should be considered, along with a clinicians' own clinical judgement (Figure 11).

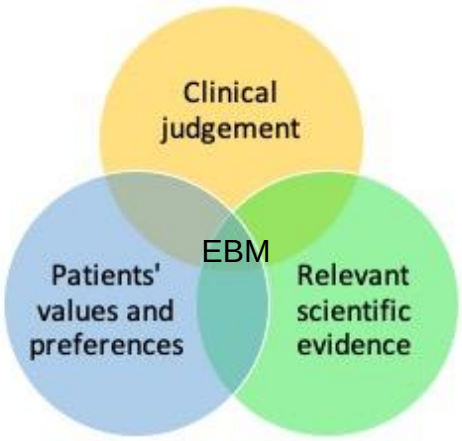


Figure 11: *Evidence-based medicine concepts, reproduced from Sackett et al.* (1996)

3.3.3 Categorising evidence

Sackett (1989) classified study types into "levels of evidence" based on their risk of bias, and susceptibility to false positive results (type I errors) and false negative results (type II errors). Historically, EBM teaching has centred around a 'hierarchy of evidence' for the appraisal of

treatment efficacy, which is traditionally illustrated using a pyramid (Figure 12).

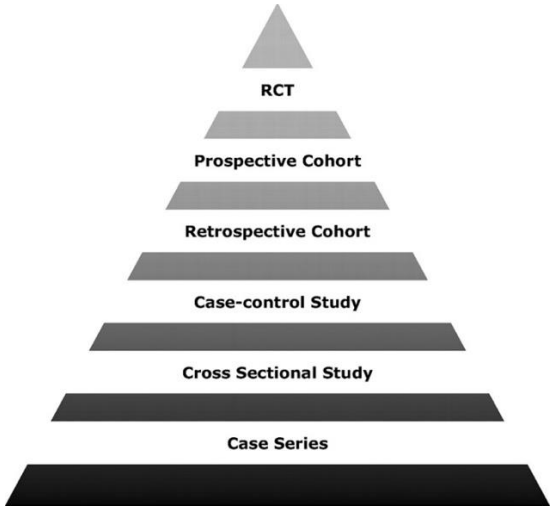


Figure 12: *Pyramid of evidence, reproduced from Ho et al.* (2008)

For a long time, a Randomised controlled trial (RCT) was considered the most credible or “strongest” evidence, as it was seen to be the study design least susceptible to bias. Observational research, such as a cohort or case-control study, was traditionally ranked lower as it was considered to be more susceptible to bias and to have a lower internal validity (Petticrew and Roberts, 2003). However, the increasing use of systematic reviews and meta-analyses has led to the displacement of RCTs as the ‘best’ source of evidence (Levi et al., 2003). Whilst systematic reviews and meta-analysis are fairly prevalent in the medical literature, there considerably fewer systematic reviews published in veterinary medicine (Dean, 2013). However, their numbers are increasing, with currently in excess of 600 systematic reviews of

relevance to veterinary medicine on the VetSRev database (CEVM, 2018).

Arlt (2016) proposed an alternative to the pyramid of evidence; the staircase of evidence (Figure 13); with each ascension, there is more overlap with the truth as there is a lower probability of bias. Notably, the staircase illustrates that there is no such thing as “perfect” research, with no study type completely free from bias, even a meta-analysis.

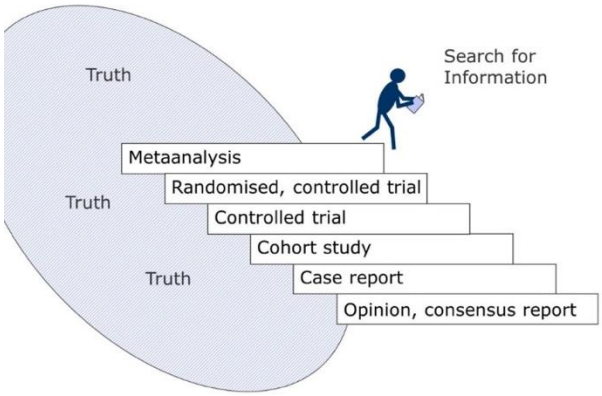


Figure 13: *The staircase of evidence* (Arlt, 2016)

The staircase of evidence, like the hierarchy of evidence before it, maintains that an RCT will always be superior to a cohort study. However, this does not take into account the “methodological aptness” of a study, which is the employment of the most appropriate study design for the clinical question (Petticrew and Roberts, 2003). Evans (2003) and Ho et al. (2008) argued that RCTs, whilst appropriate for assessing treatment efficacy, are often inappropriate for answering numerous questions in the health sciences, either due to the clinical question, or for reasons of feasibility. Evans (2003) proposed that the

evaluation of a study should not only assess efficacy, but also the appropriateness of the intervention with respect to the individual. Furthermore, Concato et al., (2000) found that a well-designed observational study could produce similar results to an RCT on the same topic. An additional criticism of Arlt's staircase (Arlt, 2016) is that it excludes qualitative and mixed-methods research from its metaphor, perhaps due to EBM traditionally being approached from a perspective of positivism, rather than as an epistemology in its own right. Interestingly however, the description of an "overlap" with the truth is more fitting with the realist perspective to knowledge acquisition, a theoretical perspective described in more detail in section 3.1 (and notably the theoretical underpinning to this thesis).

The Oxford Centre for Evidence Based Medicine advocate levels of evidence (OCEBM Levels of Evidence Working Group, 2011), rather than a hierarchy, which does acknowledge a study's methodological aptness. Unfortunately, the "Oxford 2011 Levels of Evidence", still do not consider qualitative or mixed-methods studies in their evidence appraisal.

More recently, Shaneyfelt (2016) has argued for a pragmatic application of an evolved pyramid, where it is to be used as general guide to the quality of the evidence, arguing that higher levels of evidence are only useful if they are actually available. Consequently, a more appropriate evidence based approach philosophy for this thesis utilises the

"typology of evidence" (Gray, 2009) (Table 3) which identifies multiple appropriate study types, dependent upon the research question, and considers qualitative research as a valuable contributor to the evidence on a topic. Utilising Gray's approach to research evaluation, it can be argued that a variety of methods can be regarded as valid evidence.

***Table 3: A typology of evidence, reproduced from Gray* (2009)**

Research question	Qualitative research	Survey	Case-control studies	Cohort studies	RCTs	Quasi-experimental studies	Non-experimental studies	Systematic review
Effectiveness: Does it work?				+	++	+		+++
Process of service delivery: How does it work?	++	+					+	+++
Salience: Does it matter?	++	++						+++
Safety: Will it do more harm than good?	+		+	+	++	+	+	+++
Acceptability: Will people be willing to use the service offered?	++	+			+	+	+	+++
Cost effectiveness: Is it worth paying for?					++			+++
Appropriateness: Is it appropriate?	++	++						++
Satisfaction: Are all stakeholders satisfied with it?	++	++	+	+				+

3.3.4 Criticisms of evidence-based veterinary medicine

Whilst EVM is being discussed with increasing frequency in the veterinary profession (Dean, 2013), there have been some criticisms levelled at it. First, it's applicability to decision-making in the absence of an RCT, or well-designed prospective study, a particularly pertinent criticism in the context of veterinary medicine. Second, that decisions

are being made based on small sample numbers, or patients without co-morbidities. Finally, it has been seen by some as a way of suppressing clinical freedom (Grahame-Smith, 1995; Sackett et al., 1996).

However, these criticisms can be rebutted: the absence of evidence should not be an excuse for making poor patient decisions – rather the available evidence should be critically appraised, and decisions made on an individual basis. Greenhalgh et al. (2014) argued this point further, stating that EBM requires a bespoke application of research evidence, using shared decisions reached through partnership based upon a strong doctor-patient relationship.

Furthermore, even when traditionally seen “better” types of evidence are available, an understanding and application of critical appraisal remains paramount – it is not enough for there to be available evidence, one must be able to critically appraise and apply that evidence to that particular set of circumstances.

This section has argued that EBM principles are fundamental and applicable to all research methodologies. The following section discusses review methods and provides the rationale for performing a systematic review as the first research chapter in this thesis.

3.4 Review methods

A review is the use of a rigorous scientific method to the gathering and critical appraisal of all relevant studies that address a specific question in a way that limits bias (Cook et al., 1997). There are various 'types' of review frequently named in the literature including systematic, narrative, rapid and critical. However, there is no universally approved set of distinct and mutually exclusive types of review.

Grant and Booth (2009) defined 14 unique review types and classified each one based upon the rigour of their methods; namely the categorisation of the Search, Appraisal, Synthesis and Analysis (SALSA) of the review. The review types identified ranged from the well-known systematic reviews and meta-analyses, which use an exhaustive, comprehensive search strategy to gather evidence, to critical, rapid and scoping reviews where the comprehensiveness of searching is determined by external factors such as time constraints. Some review types used a formal appraisal instrument to assess the identified literature, whilst other types did not. Finally, each review type defined by Grant and Booth (2009) differed in its information synthesis and analysis methodology.

3.4.1.1 Literature searching

For a comprehensive search of the veterinary literature, it has been shown that searching via CAB Abstracts is essential; CAB abstracts had a coverage of 97.5% of basic veterinary journals and 90.2% of an

extensive list of veterinary journals, with the addition of subsequent search databases improving coverage (Grindlay et al., 2012). The authors examined nine bibliographic databases whose scope included veterinary medicine and science publications with the exclusion of AGRICOLA and ProQuest's Biological Sciences. Lists of active veterinary journals were created (one basic, and another extensive) and their percentage coverage was calculated. The authors established that the selection and addition of a second database to CAB abstracts, with the aim of broadening the search, should be based upon the purpose of the search. However, it is important to note that no combination produced 100% coverage of the extensive list and that the coverage provided by each database may have changed between the year of its publication and the present day.

3.4.1.2 Systematic reviews

Each type of review defined by Grant and Booth (2009) had strengths and weaknesses, so selection of the most suitable type for the research question and situation is key. A systematic review is defined as the systematic appraisal and synthesis of research with a systematic, detailed and repeatable methodology (Grant and Booth, 2009). The goal of a systematic review is for a comprehensive search of all literature and study types. In addition, there is often a critical appraisal or quality assessment process to determine which papers are included or excluded.

In the previous section, a strong argument was made for the use of a variety of evidence sources whilst undertaking EBM. However, systematic reviews continue to remain essential for the optimisation of the research process; it is important to understand what research has already been performed, it's findings, strengths and weaknesses, in order to proceed constructively. A systematic review was chosen for this thesis to gather the published literature on specific health problem consultations, and to facilitate the critical appraisal of any reported outcome measures. Chapter four will present the results of this review.

3.4.1.3 Critical appraisal

As previously stated, critical appraisal is a fundamental step in evidence evaluation. There are numerous ways to critically appraise research including the use of study-type-specific critical appraisal tools (CA tools), for example the Appraisal tool for Cross-Sectional Studies (AXIS) (Downes et al., 2016), or by making a broader assessment of the study's validity and reliability.

Furthermore, accurate critical appraisal requires appropriate study reporting. Reporting guidelines, for example the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher et al., 2009) or the Consolidated criteria for reporting qualitative research (COREQ) checklist (Tong et al., 2007), exist and are more frequently a standard submission requirement for peer reviewed journals (APA Publications, 2008).

There is significant variation in published CA tools and currently, there is no universally agreed generic tool that can be applied uniformly across study types (Katrak et al., 2004). However, there are numerous CA tools available. CA tools are used to assess the reliability and the validity of a study but ironically, many of the tools used have not themselves been validated or assessed for reliability (Crowe and Sheppard, 2011). It is important to remember that there is no such thing as a perfect measurement tool, and any instrument will have both advantages and disadvantages (Schuwirth and van der Vleuten, 2012).

3.4.1.4 Validity and reliability

In the absence of a published CA tool, an assessment of the validity and reliability of a study should be performed. There are numerous definitions for the terms validity and reliability. Validity can be defined as the accuracy (Taylor and Mills, 2006), or accuracy and appropriateness (Winter, 2000) of an instrument in measuring an outcome. The reliability of an instrument can be defined as it's consistency (Taylor and Mills, 2006) with Winter (2000) proposing reliability to be an instrument's replicability.

Numerous types of validity are described in the literature, but the three main types described by Heale and Twycross (2015) are:

- Content validity: the extent to which an instrument measures all appropriate aspects of the research paradigm accurately - closely linked to good experimental design

- Construct validity: the level at which a test measures what it is asserted to measure.
- Criterion validity: how closely a test relates to others measuring the same construct

Other types of validity described include face validity (does the research appear valid), predictive (or internal) validity which is the ability to link an instrument to a future outcome, and experimental (or external) validity which is an assessment of the generalizability of an instrument (Heale and Twycross, 2015).

When assessing the reliability of an instrument, Heale and Twycross (2015) describe three attributes for consideration:

- Homogeneity: is the level at which every item in the instrument measures the same construct. It is also known as the internal consistency
- Stability: is the level of results consistency during repeated use of the instrument and is also known as the repeatability
- Equivalence: is an assessment of the level of agreement between multiple users of the instrument in question

What is clear, is that an instrument which does not measure what it is purported to measure, or which is inconsistent, should affect the decision process when considering its applicability. In order to apply the

findings of a study to practice, one of the fundamental concepts of EBM, an assessment of its validity and reliability is essential.

This section has examined the systematic review and critical appraisal process. The next section examines qualitative methodologies.

3.5 Qualitative methodologies

Qualitative research methodologies use words as data (Braun and Clarke, 2013), and are more suitable than a quantitative approach when looking to gain an in-depth understanding of a person's thoughts, motivations or 'lived experience', for exploratory studies, or for complex phenomena.

There are numerous qualitative methodological approaches, of which the aims, sampling, analysis and position of the researcher differs. However, there are four key aspects shared between all qualitative analysis methods:

- Familiarisation with the data (also known as immersion)
- Coding the data
- Organising the data
- Interpretation

3.5.1 Types of qualitative approach

Commonly encountered qualitative approaches include Grounded theory (Charmaz and Belgrave, 2007), Interpretative Phenomenological

Analysis (IPA) (Smith, 1996), Framework analysis (Ritchie et al., 2013), Content analysis (Weber, 1990), Ethnography (Hammersley and Atkinson, 2007), Discourse analysis (Potter, 2013) and Thematic analysis (Braun and Clarke, 2006). An overview of their similarities and differences can be viewed in Table 4. Furthermore, there are numerous qualitative data-collection methodologies including question-based discussions such as interviews or focus groups, immersive or observational methodologies such as ethnography, and documentary methods such as diaries or letters.

Qualitative research methods produce a huge volume of data which is time consuming to analyse. Analysis is usually inductive meaning that analysis begins during data collection, allowing questions to be improved and emerging themes to be pursued in more depth. Sections can be multiple coded, as data can be cross cut in multiple ways (Pope et al., 2000).

Table 4: Overview of the differences and similarities between commonly used qualitative methodologies, reproduced from Lawrence (2016)

	Grounded theory	**Phenomenology**	**Framework analysis**	**Content analysis**	**Ethnography**	**Discourse analysis**	**Thematic analysis**
Aims	To produce a theory that is grounded in the data	To understand individual in-depth experience	Mainly used for "problem-oriented" method in health services research	To capture the meaning at descriptive level	Immersion in natural setting to gain insider experience	To capture nuances of text or public discourse	To identify analyse and report patterns (themes) within data
Sampling and methods	Aims to capture variation. Theoretical sampling	Small, homogenous sample. Interviews and diaries	Interviews with semi-structured questionnaire. Purposive/ convenience sampling	Documents, e.g. newspapers, mass media. Purposive/convenience sampling	Observational studies	Documents, speeches, media. Purposive/ theoretical sampling	In depth interviews and focus group discussions
Analysis	Constant comparison method. Generation of concepts and relationships	Identification of descriptive and interpretative. Themes that actively engages the researcher and participants	Theory driven. Deductive approach starting with questions on interview topic guide	Predetermined coding system. Produces frequency counts	Data-driven by no fixed commitment to developing new theory	Detailed, thorough analysis of discourses – speeches, conversations and written text	Identifying and coding themes within data. Most common analytical approach
Researcher's position	Researcher position or potential 'bias' is managed	Researchers position is paramount; importance of reflexivity	Neutral position of researcher, limited interpretation	Researchers position neutral. Inter-rater reliability often calculated	Researchers skill and neutral position vital	High level of interpretation or abstraction expected	Not wedded to any theoretical perspective. Depends on theoretical position adopted

3.5.1.1 Thematic analysis

Thematic analysis (TA) was the methodological approach adopted for the qualitative portions of this thesis. TA is a theoretically flexible approach, forming the basis of many other qualitative approaches (Boyatzis, 1998; Ryan and Bernard, 2000), for this reason, some researchers do not consider TA to be a methodology. However, Braun and Clarke (2006) argued that thematic analysis should be considered a method in its own right, maintaining its flexibility through the assertion that it is compatible with, and independent of, all theoretical perspectives.

Thematic analysis is not linear method, rather it is an iterative process containing six distinct phases (Braun and Clarke, 2006). Figure 14, reproduced from Braun and Clarke (2006), summarises the process of TA.

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Figure 14: *The six phases of thematic analysis, reproduced from Braun and Clarke (2006)*

An assessment of rigor in quantitative research, through the assessment of a study's validity and reliability has been discussed in

section 3.4.1.4. The following section examines the strategies employed to achieve research rigor in qualitative studies.

3.5.2 Rigor in qualitative research

Approaches to instilling rigor in qualitative research are numerous and, at times, controversial, depending upon the researcher's theoretical perspective (Braun and Clarke, 2013). Guba (1981) proposed a model for assessing the trustworthiness (or rigor) of qualitative research which used the terms credibility, transferability, dependability and confirmability instead of internal validity, external validity/generalisability, reliability and objectivity respectively. However, the quality of qualitative studies can, and should, still be assessed whilst accounting for its distinctive goals (Mays and Pope, 2000). First, it is important to assess whether the research is credible and authentic, remaining faithful to the participant's experience. Second, as with quantitative methodologies, it is important to appraise the integrity of the research and its analysis, ensuring that alternative explanations have been explored and bias has been examined.

It is also important to understand and acknowledge the assumptions within qualitative research; in particular, the role of context. The researcher, participants and even the research setting can affect the data analysis and interpretation. Being aware of the assumptions and biases presented of the researcher is called reflexivity or researcher positionality and is a fundamental step in good qualitative research.

3.5.2.1 Reflexivity

Reflexivity is the continuous process of self-reflection and the understanding alongside the knowledge that this can affect the research process (Berger, 2015). Furthermore, reflexivity should value the contribution of the researcher, the research environment and the research context to the interpretation process, and should track the changes of the researchers understanding throughout the research journey (Angen, 2000; Berger, 2015).

To this end, this PhD has been funded by an unrestricted grant from Onswitch Ltd. and the University of Nottingham, with support from the Centre for Evidence-based Veterinary Medicine. A single author (LC) conducted all data collection for all studies in this PhD thesis, which was undertaken full-time, over three years. A more detailed, personal reflexivity statement is available in appendix 1.

3.5.2.2 Sampling strategies

Broadly speaking, there are three commonly used sampling strategies in any research: probability, convenience and purposive sampling (Teddlie and Yu, 2007). Probability sampling is the sampling strategy employed by many quantitative studies, with the objective being to accurately represent an entire population. To this end, it is underpinned by theoretical distributions, for example normally distributed data. Convenience sampling utilizes willing and easily accessible participants for data collection. Finally, purposive sampling is the purposeful selection of a range of participants relevant to the research question

and is the sampling strategy typically used in qualitative research (Braun and Clarke, 2013).

Within purposive sampling strategies, Teddlie and Yu (2007) described further stratifications:

- Sampling for representativeness – where a purposive sample is selected to represent a population as much as possible
- Sampling unique cases – used when exploring a unique case rather than a broader issue
- Sequential sampling – sequential selection based upon research relevance rather than population representativeness. Emergent sampling (also known as opportunistic sampling) and snowball (chain) sampling are subcategories of sequential sampling

The use of multiple purposive strategies is also widely employed in qualitative research (Teddlie and Yu, 2007).

3.5.2.3 Reliability of findings

Whilst an assessment of inter-rater reliability (IRR) is fundamental to rigorous quantitative research, doubt has been cast on the value of an IRR calculation as a measure of qualitative rigor. Due to the unstructured nature of focus group and interview discussions, the coding process must also be broad and unstructured, with coding being fluid and inductive (Morse, 1997). Morse (1997) went on to argue that the use of a second coder would trivialise this interpretive process.

Furthermore, Armstrong et al. (1997) found that while six people coding a single transcript reached close agreement on the empirical themes, they connected them differently. This being said, there are benefits to qualitative analysis in seeking the clarification of a second coder, despite not calculating IRR; primarily to ensure that the primary researcher has interpreted the data rationally, and to assist with the development of ideas for drawing the codes into themes.

3.5.2.4 Generalisability

The generalisability of a study is the concept that the findings can be used to create a “universal law” which can be applied to other populations (Braun and Clarke, 2013). Due to the small sample sizes and the importance of context in qualitative research, it has historically been considered by some to be ungeneralizable. However, Lincoln and Guba, (1985) argued for the concept of “transferability” rather than generalisability in qualitative research, with the onus placed upon an individual as to whether a study’s results could be transferred to their own personal context. Furthermore, Morse (1999) argued that through the purposeful selection of study participants, and sampling until theoretical saturation (the point at which no new ideas or theories arise from the data), a comprehensive theory can be developed, allowing the findings from qualitative studies to be generalised.

3.5.2.5 Triangulation

Another method of ensuring rigor in qualitative studies is the use of triangulation; ‘cross-checking’ of data to gain a more detailed picture of

the phenomenon in question, and can be undertaken at the level of the data methods, data sources or the investigators (Krefting, 1991). It should be noted that triangulation aims to achieve a richer perspective on the research question, rather than to attain an absolute truth, which would be at odds with this researcher's theoretical perspective.

This section has provided a brief overview of general qualitative methodologies and provided the argument for using TA as the analytical approach for the qualitative aspects of enquiry in this thesis. The next section considers the framework which will be utilised to assess the validity of the thesis findings.

3.6 Kane's validity framework

As has been discussed in a previous section of this chapter, mixed methods research is a highly advantageous paradigm, particularly due to the breadth of the research question. However, the problem of how to assess the validity of thesis conclusions, in light of its mixed methodology, remains. To this end, Kane's validity framework will be used as a key philosophical underpinning to this thesis with the aim of building a validity framework to answer the research question; 'Defining the good consultation: what is it and how could we measure it?'

A flexible, interpretative use argument for validity has been set out in Kane's validity framework. In this framework, assumptions of an instrument are challenged and evidence is collated, allowing the

pragmatic evaluation of a tool (Kane, 2001). Kane argues that validation requires interpretation and must be in light of the measurement's context. Applying Kane's validity framework involves identifying the context of a measurement's use, and identifying and testing the weakest assumptions of its validity argument. The framework follows a process of scoring, generalisation and extrapolation before finally making an interpretation and decision relating to the measure's validity (Figure 15).

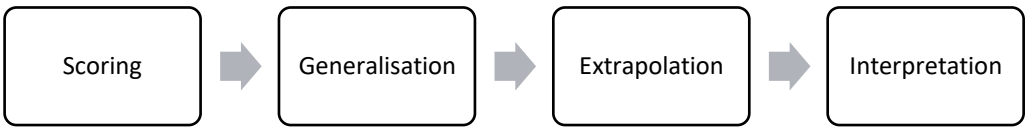


Figure 15: *Kane's validity framework* (Kane, 2001)

Cook and Hatala (2016) set out an eight-step, practical approach to using Kane's validity framework. Table 5 lists these eight steps along with the approach applied in the context of this thesis. The accompanying interpretation-use argument for consult the scoring instrument is laid out in Table 6.

Table 5: Approach to thesis method validation

Step	**Practical approach to Kane's validity framework** (Cook and Hatala, 2016)	**Practical approach applied in context of this thesis**
1	Define the construct of interest	Small animal, health problem consultations
2	Make the intended decisions explicit	Assess consult performance and identify feedback points for the vet
3	Define the interpretation-use argument (Identify and test assumptions) and prioritize what validity evidence is needed	Looking for instrument(s) which can quantify consultations with the interpretation-use argument (Table 6**Error! Reference source not found.**). Assumptions include that scoring well on in consultation measures positively correlates with post consult measures of success and that raters have received proper training
4	Identify candidate instruments and/or create/adapt a new instrument	Post consult candidate instruments identified through systematic review In consult candidate instruments identified through literature review, systematic review and focus groups
5	Appraise existing evidence and collect new evidence as needed (validity argument)	Critical appraisal of existing instruments Validity and reliability testing of new instruments
6	Keep track of practical issues including cost	Pre-pilot and pilot to assess practical issues
7	Compare the validity argument with the interpretation-use argument	Identify any gaps in evidence for scoring, generalisation, extrapolation and implications of the chosen tools
8	Make a judgment: does the evidence support the intended use?	Make judgement on whether the instrument(s) can be used to assess small animal health problem consultations

Table 6: Interpretation-use argument for consult scoring instrument

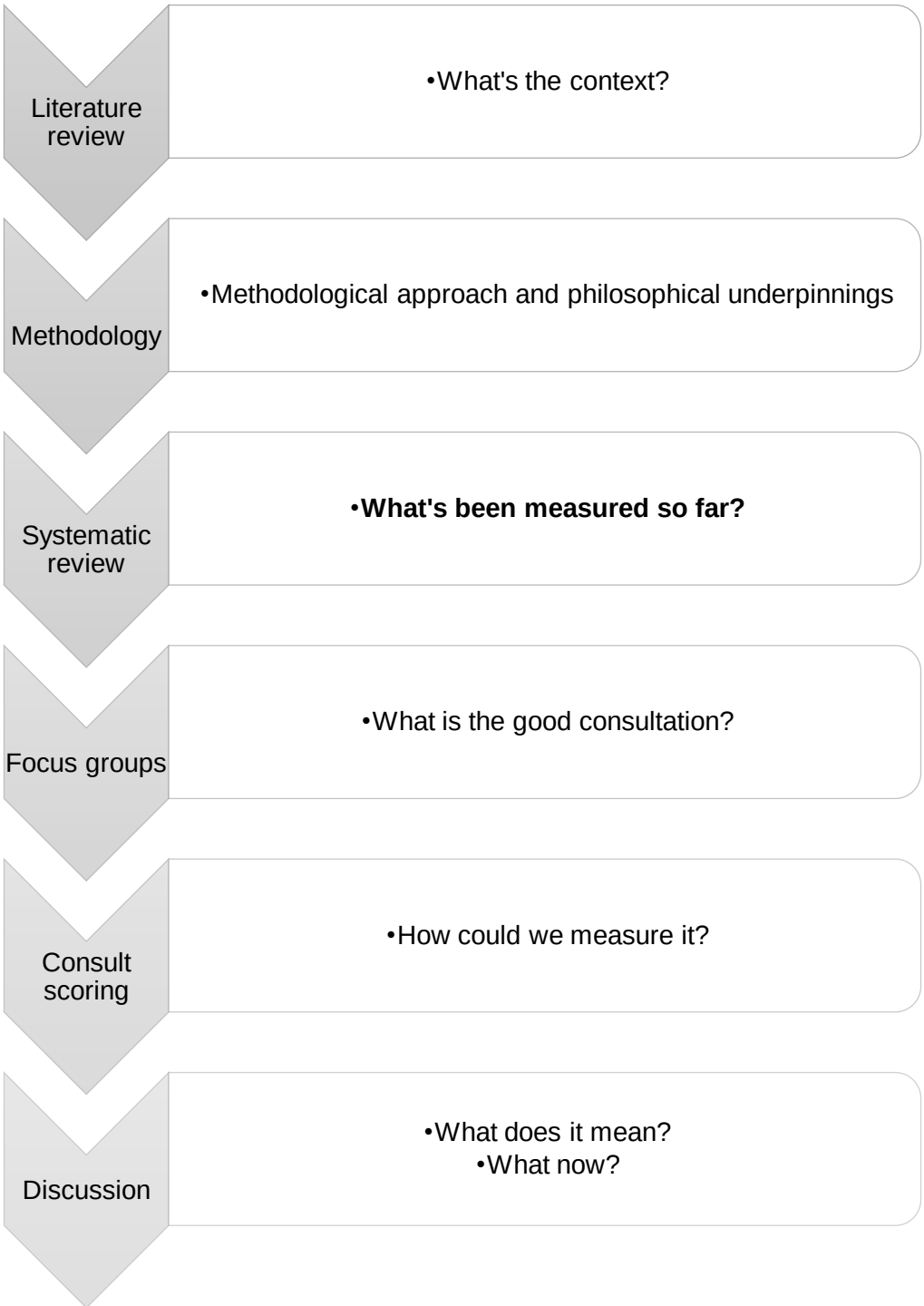
Scoring	Are observations correctly turned into consistent numeric scores?	Cronbach's alpha to assess instrument internal consistency
Generalisation	Score of single consult aligns with overall scores	Ensure adequate sampling and assess whether scores are reproducible between performances and raters (inter- and intra-rater reliability)
Extrapolation	Scores correlate with other measures of performance	Assess if in-consult scores correlate with post consult measurements

Implications	Assessment has positive effect on stakeholders with minimal negative effects.	Assessment of impact of consultation scoring

3.7 Conclusion

This chapter has examined the methodological underpinnings of this thesis including an argument for the research approach and the theoretical perspective of the researcher. The next chapter will report the findings of a systematic review examining measurements of success in small animal specific health problem consults.

4 Measuring the success of specific health problem consultations in cats and dogs: a systematic review



4.1 Introduction

The narrative overview of the available literature on consultations, set out in chapter two, described the context and the individual facets of a consultation, highlighting both the importance and the complexity of this interaction.

Subsequently, the methodology chapter has emphasised the value of an evidence-based approach when making healthcare decisions, and the importance critical appraisal of literature in order to reach an unbiased conclusion.

This chapter presents the first study of this thesis: a systematic review examining measures of success in small animal health problem consultations. A portion of this chapter has been published prior to the submission of this thesis (Corah et al., 2018).

4.1.1 Overview

Consultations in which pets are examined for a specific health problem (SHP) are known to be distinct from preventative medicine consults through their communication style (Shaw et al., 2008), the extent of the clinical exam performed (Robinson et al., 2015b) and the number of problems discussed (Robinson et al., 2015a). The differences between these types of consultations suggest that factors contributing to success may also be different.

4.1.2 What is success?

Success in a consultation could be defined as any subjectively favourable outcome, which could include animal welfare or patient-based outcome measures (PBOMs), an assessment of the communication, client or vet satisfaction, compliance, or financial aspects. Achieving a diagnosis may be assumed to be a measure of a successful consultation; however, given the infrequency of a definitive diagnosis (Robinson et al., 2016b) and the realities of first opinion small animal practice, the use of diagnosis reached as a measure of success would appear to be invalid.

4.1.3 Why a systematic review?

There seem to be many opinions on the factors which contribute to a 'good' consultation but to date, there does not appear to be much peer-reviewed empirical evidence as to what makes a consultation successful or otherwise.

Systematic reviews use a rigorous scientific method to gather and critically appraise all relevant studies in a way that limits bias (Cook et al., 1997). Conducting a systematic review will consider the current available evidence on SHP consultations and inform the subsequent research. To the authors' knowledge, there have been no systematic reviews looking at the success of SHP consults in veterinary medicine.

However, it should be noted that there have been numerous systematic reviews published on individual outcome measures of success in medicine such as adherence (Cramer, 2004), patient satisfaction (Batbaatar et al., 2017) and patient experience (Doyle et al., 2013). In addition, a systematic review examining the measures of success in preventative veterinary medicine consults has recently been published (Robinson et al., 2018).

4.1.4 Aims and relevance

The aim of this review is to identify and describe existing published evidence that describes first-presentation, specific health problem consultations in cats and dogs in veterinary practice. The secondary aim is to identify the outcome measures of success, the tools used to measure this, and to perform an appraisal of the tools' validity.

4.2 Methods

4.2.1 Definition of terms

For the purpose of this review, a specific health problem consultation was defined as: "*any consultation where the primary reason for presentation was due to an injury, disease or clinical signs currently affecting the animal*" (Robinson et al., 2016a). In addition, the consultation was to be performed by a qualified Veterinary Surgeon. Dogs and cats were defined as, and limited to, domestic pets, laboratory cats or dogs and feral cats or dogs and success was defined as a subjectively favourable outcome to a consultation.

4.2.2 Protocol development

A protocol was developed to establish the methods prior to performing the systematic review (Appendix 2). A protocol is a document detailing the justification, a predefined search strategy and analytical criteria for the review (Moher et al., 2015), and it's development is important when performing a review to minimise the risk of preconceived biases from the authors (Higgins and Green, 2011).

4.2.3 Eligibility criteria

The population of interest was identified as specific health problem consultations, performed by a veterinary surgeon, involving cats and/or dogs. Papers also had to be peer-reviewed research science, in English and available to obtain through the University of Nottingham library or inter-library loan. Ulrich's web[5] was used to define the peer-reviewed status of a journal. The inclusion and exclusion criteria are specified in (Table 7).

Table 7: Systematic review eligibility criteria

Criteria	Inclusion	Exclusion
Population	Specific health problem consultations performed by a veterinary surgeon, involving cats and/or dogs	Consultations not performed by a veterinary surgeon Preventive medicine consultations Post-operative checks Behaviour consultations Nutrition consultations Weight checks
Study Type	Peer-reviewed published research science	Narrative reviews, letters, expert opinion, case studies, guidelines without clear methods of how formed

[5] www.ulrichsweb.com, ProQuest LLC

Language	English language manuscripts	Non-English language manuscripts
Publication Type	Full study reported Published literature	Grey literature Abstracts (methods and results not available on request) CPD/CE notes
Availability	Able to obtain through University of Nottingham library or inter-library loan	Unable to obtain whole manuscript

(CE = Continuing Education; CPD = Continuing Professional Development)

4.2.4 Search methods

Searches of Medline In-Process & Non-Indexed Citations and Ovid MEDLINE (1946 – present), and CAB Abstracts (Ovid) (1910 – present) were performed on 25th May 2016. These databases were chosen to give the widest possible coverage of veterinary literature with the inclusion of MEDLINE to ensure papers with a biomedical perspective were detected (Grindlay et al., 2012).

The search terms were devised, and truncated where appropriate, to encompass species terms (dog, dogs, canine, canines, canis, cat, cats, feline, felines, felis, pet, pets, small animal$ and companion animal$) and consultation terms (consult$, appointment$, check-up$, checkup$, visit, visits, physical exam$, clinical exam$, communica$). In CAB Abstracts these terms were combined with the Boolean operator AND and the veterinary subset (ve.ss). This was not available in the MEDLINE database, so the terms were combined with vet$. Searches were based on reference title, keywords and abstract. Search results

from both databases were imported into EndNote[6] for manual sorting according to the predefined protocol. If the abstract was unavailable, a decision was made based upon title and keywords.

4.2.5 Application of criteria

A single author (LC) performed the searches and removed the duplicates within Endnote. A search result was considered a duplicate if had the same author, the same title and similar abstract. The most recent reference was discarded as the duplicate and, if they were published in the same year, the non- peer-reviewed result was discarded.

A single author (LC) applied the inclusion and exclusion criteria (Table 7) to each manuscript. A random 10% of the search output was reviewed by a second author (LM) using the inclusion and exclusion criteria, to check for concordance. Figure 16 shows the systematic application of the eligibility criteria.

[6] Clarivate Analytics, Endnote for Windows, Version 6

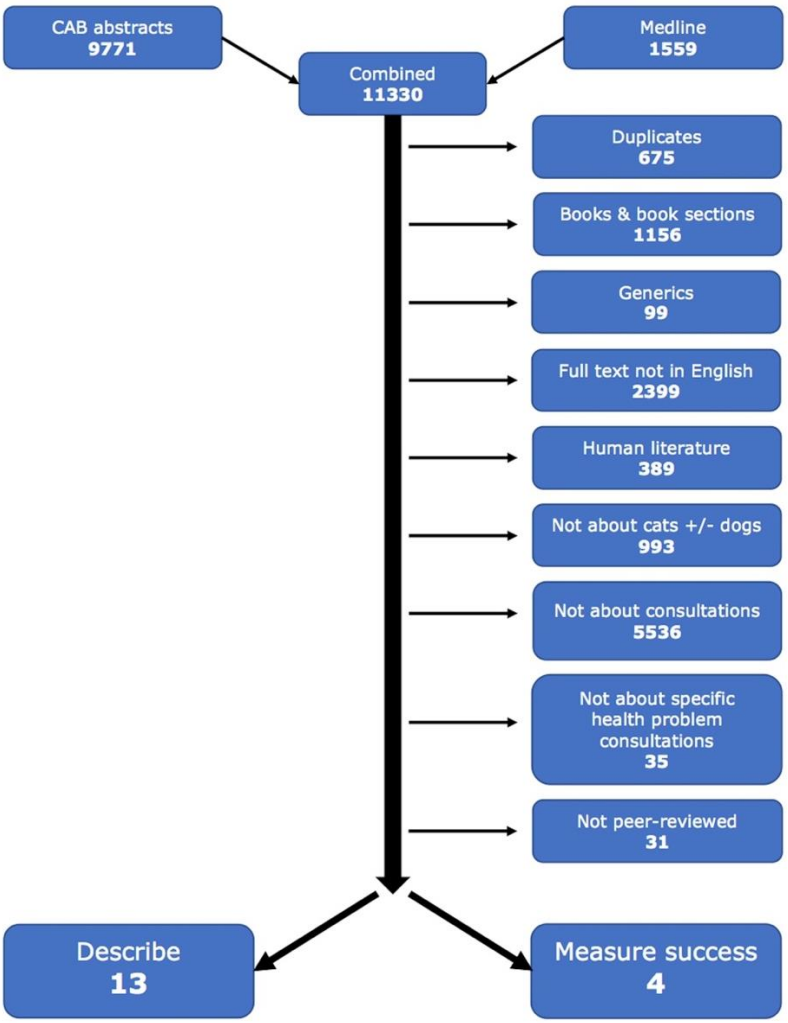


Figure 16: *Flowchart summary of the application of the predefined sorting criteria*

The full text was retrieved for all remaining references. Conference proceedings and narrative review articles were removed, followed by non-peer reviewed research. The remaining references were peer-reviewed, primary research articles, describing a specific health problem consultation, meeting the definitive inclusion criteria.

4.2.6 Data synthesis

Data regarding the measured success factor, journal of publication, study design, sampling strategy, key findings and key weaknesses were extracted from papers that measured consultation success and tabulated in Microsoft Excel[7]. Information regarding the journal, study design and sampling strategy was extracted from papers which described the small animal consultation. Finally, a conceptual map was created to visualise the relationship between success factors.

4.2.7 Evaluation of validity and quality

A quality appraisal was completed for each study that had attempted to measure success using the AXIS critical appraisal tool for cross-sectional studies (Downes et al., 2016) (Table 8) with the results reported as key study weaknesses. Critical appraisal was performed by two authors (LC and RD) and where there was a disagreement, a third author (KC) was consulted. In addition, an assessment was made about the methodological reliability and/or validity and the results were tabulated. The review was reported, where appropriate, according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009).

[7] Microsoft Excel for Mac, Version 16.25

***Table 8: AXIS critical appraisal tool, reproduced from Downes et al.* (2016)**

Introduction	Were the aims/objectives of the study clear?
Methods	Was the study design appropriate for the stated aim(s)?
	Was the sample size justified?
	Was the target/reference population clearly defined? (Is it clear who the research was about?)
	Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?
	Was the selection process likely to select subjects/participants that were representative of the target/reference population under investigation?
	Were measures undertaken to address and categorise non-responders?
	Were the risk factor and outcome variables measured appropriate to the aims of the study?
	Were the risk factor and outcome variables measured correctly using instruments/measurements that had been trialled, piloted or published previously?
	Is it clear what was used to determine statistical significance and/or precision estimates (e.g. p values, CIs)
	Were the methods (including statistical methods) sufficiently described to enable them to be repeated?
Results	Were the basic data adequately described?
	Does the response rate raise concerns about non-response bias?
	If appropriate, was information about non-responders described?
	Were the results internally consistent?
	Were the results for the analyses described in the methods, presented?
Discussion	Were the authors' discussions and conclusions justified by the results?
	Were the limitations of the study discussed?
Other	Were there any funding sources or conflicts of interest that may affect the authors' interpretation of the results?
	Was ethical approval or consent of participants attained?

4.3 Results

There were 9,771 results returned from CAB Abstract searches and 1,559 results from Medline, giving a combined total of 11,330 search results.

Figure 16 depicts the sorting process; 423 results were identified by Endnote as duplicates and a further 252 results were manually

identified and removed. 1,255 results were excluded as they were non-journal articles, 2,399 were not in English and 6,953 did not concern the population of interest. Of the remaining papers, 29 were narrative review articles (not primary research) or conference proceedings, and two were published in non-peer-reviewed journals. There was complete concordance between two authors (LC and LM) as to which publications met the inclusion criteria.

Following sorting, there were 17 papers that met the inclusion criteria. Of these, four measured a success factor (Table 9) with the remaining 13 describing the consultation (Table 10). The success factors measured were compliance (n=2), client satisfaction (n=1) and veterinary surgeon satisfaction (n=1).

Table 9: Summary of included papers measuring a success factor

Title	Authors	Journal	Study design	Outcome measure for success	Sampling strategy	Key findings	Key study weaknesses
Compliance with short-term oral antibacterial drug treatments in dogs	Grave and Tanem (1999)	JSAP	Cross-sectional	Compliance	Successive inclusion of patients presented to university outpatient department at weekends/evenings with acute bacterial infections.	Compliance significantly higher in owner group which felt that vet spent enough time during the consultation (P<0.002)	- Sample size unjustified and sample non-representative - Response rate not stated and non-responders not categorised or reported - Questionnaire not fully validated (pilot only) - Statistical methods poorly described - Basic data inadequately described
Effect of veterinarian-client-patient interactions on client adherence to dentistry and surgery recommendations in companion-animal practice	Kanji et al., (2012)	JAVMA	Cross-sectional	Compliance	Randomised list of companion animal vets in Ontario contacted in sequence until 20 participants Video recording of consults	Odds of compliance seven times greater for clients receiving clear recommendations (P=0.001; 95% CI, 1.8-25.4) Client satisfaction and Relationship Centred Care scores significantly higher in adhering	- Client satisfaction questionnaire fully validated in veterinary medicine; other tools validated in medical literature only - Response rate raises some concerns about non-responder bias of clients - Non-responding clients not described

						clients (P=0.023 and P=0.048 respectively)	
Companion animal veterinarians' use of clinical communication skills	McArthur and Fitzgerald (2013)	Australian Veterinary Journal	Cross-sectional	Client satisfaction	Targeted approach of large veterinary employers Audio recording of consults	Satisfaction significantly higher in consultations where the vet expressed empathy to the client (P<0.001)	- Sample size unjustified and sample non-representative - Non-responders not categorised or reported - Instruments validated in medical literature - Statistical methods poorly described - Response rate raises concerns about non-responder bias - Not all results presented as described in methods
Veterinarian satisfaction with companion animal visits	Shaw et al. (2012)	JAVMA	Cross-sectional	Veterinary surgeon satisfaction	Random sample of companion animal vets in Ontario, Canada. All clients seen asked to participate Video recording of consults	Vet satisfaction most strongly correlated with vet-client-animal relationship (Pearson correlation coefficient=0.58) and data gathering process (PCC=0.57)	- Non-responders not categorised - Instruments validated in medical literature - Statistical significance stated for model only

(JAVMA = Journal of the American Veterinary Medical Association; JSAP = Journal of Small Animal Practice)

Table 10: Summary of included papers describing the consultation

Title	Authors	Journal	Study design	Sampling strategy	Key findings
Use of the measure of patient-centred communication to analyze euthanasia discussions in companion animal practice	Borden et al. (2010)	JAVMA	Cross-sectional	Undisclosed standardised clients used to present 2 different cases to stratified random sample of veterinary surgeons within 100km of the University of Guelph Audio recording of consults	Vets best at finding common ground and worst at exploring the illness experience. Client-centeredness varies depending on case presentation Longer appointments correlate with improved aspects of client centeredness
Prevalence and nature of cost discussions during clinical appointments in companion animal practice	Coe et al. (2009)	JAVMA	Cross-sectional	Randomised list of companion animal vets in Ontario contacted in sequence until 20 participants. 5 problem and 5 wellness consultations randomly selected for analysis Video recording of consults	Specific costs not frequently discussed in consults. When discussed, vet initiates the discussion 67% of the time. Cost more likely to be discussed in a consult where a diagnostic testing decision is made Cost discussions increase appointment length

Analysis of solicitation of client concerns in companion animal practice	Dysart et al. (2011)	JAVMA	Cross-sectional	Randomised list of companion animal vets in Ontario contacted in sequence until 20 participants Video recording of consults	37% of consults had a vet solicitation of client concerns during the opening segment. Open-ended solicitation resulted in elicitation of more client concerns. 55% of the client responses to solicitation were interrupted by the vet before the client had finished. If no solicitation of client concerns at outset, 4 x more likely to have a late arising concern raised by client
The structure of the small animal consultation	Everitt et al. (2013)	JSAP	Cross-sectional	Purposive sampling of practices and vets Video recording of consults	Veterinary consultations are interactive and iterative, not linear as taught by Calgary-Cambridge model
Capturing the complexity of first opinion small animal consultations using direct observation	Robinson et al. (2015b)	Veterinary Record	Cross-sectional	Convenience sample of sentinel practices Direct consult observation	Fewer problems discussed in specific health problem consultations compared with preventative medicine consults.

Clinical examination and weighing of patients in small animal consultations	Robinson et al. (2015a)	Veterinary Record	Cross-sectional	Convenience sample of sentinel practices Direct consult observation	Full clinical exam performed in 60.6% of patients and focussed exam in 31.4% of patients. 47.5% of patients were weighed At least 1 abnormality found in 77.2% of patients receiving some sort of examination. A full exam performed less frequently in health problem consultation compared with preventative medicine consult
Consultation length in first opinion small animal practice	Robinson et al. (2014)	Veterinary Record	Cross-sectional	Convenience sample of sentinel practices Direct consult observation	Consultations exceeded the allocated time (10 minutes) in 48.8% of consults Weak positive correlation between number of problems discussed and consultation length
Diagnostic testing in first opinion small animal consultations	Robinson et al. (2015c)	Veterinary Record	Cross-sectional	Convenience sample of sentinel practices Direct consult observation	No diagnostic test in majority of consults (71.5%) In-consult tests carried out more often for presenting problems compared with non-presenting problems

Investigating common clinical presentations in first opinion small animal consultations using direct observation	Robinson et al. (2015d)	Veterinary Record	Cross-sectional	Convenience sample of sentinel practices Direct consult observation	Of the specific health problems – total number of non-presenting problems higher than presenting problems in all species.
Use of the Roter Interaction analysis system to analyse veterinarian-client-patient communication in companion animal practice	Shaw et al. (2004)	JAVMA	Cross-sectional	Random sample of companion animal vets in Ontario, Canada. All clients seen asked to participate Videotaped appointments	Vets contribute 62% of total conversation (54% to client and 8% to pet) Most time spent providing information (48%) then building a relationship (30%) 1/3 appointments vets didn't ask about understanding and in 2/5 didn't ask for client's opinion.
Veterinarian-client-patient communication during wellness appointments versus appointments related to a health problem in companion animal practice	Shaw et al. (2008)	JAVMA	Cross-sectional	Random sample of companion animal vets in Ontario, Canada. All clients seen asked to participate Videotaped appointments	More time was spent data gathering biomedical information and client education with less time on lifestyle questions in problem appointments. Less conversation dedicated to relationship building by vet in problem appointments Vet more likely to ask about understanding and less likely to ask for client opinion in problem appointments.

Veterinarian-client-patient communication patterns used during clinical appointments in companion animal practice	Shaw et al. (2006)	JAVMA	Cross-sectional	Random sample of companion animal vets in Ontario, Canada. All clients seen asked to participate Videotaped appointments	Two different patterns of communication used in veterinary consultations – bio-lifestyle-social (relationship centred care) or biomedical (paternalistic). Vets use both in different situations (85% of problem appointments had biosocial pattern) 46% use primarily biomedical, 16% primarily biosocial and remaining 38% mixed Content of communication varied between the different communication patterns
Gender differences in veterinarian-client-patient communication in companion animal practice	Shaw et al. (2012b)	JAVMA	Cross-sectional	Random sample of companion animal vets in Ontario, Canada. All clients seen asked to participate Videotaped appointments	Female vets more likely to build rapport, talk to patient and perform more relationship centred appointments.

(JAVMA = Journal of the American Veterinary Medical Association; JSAP = Journal of Small Animal Practice)

The 17 publications were published in four journals with nine appearing in JAVMA. Five were published in the Veterinary Record, two were published in JSAP and one in the Australian Veterinary Journal. All included articles were published between 1999 and 2015 with the majority (12 of 17) published since 2010. All papers which met the inclusion criteria were cross-sectional studies.

Of the papers measuring a success factor, three out of four examined video or audio-recorded consultations performed by small animal veterinary surgeons. The remaining paper investigated dogs presented to a small animal practice with acute bacterial infections, which had been prescribed antibiotics.

Three out of four papers which measured the success of a consultation and five out of 13 of the papers which described a consultation used the Roter Interaction Analysis System (RIAS) for analysis. All of the papers measuring success used questionnaires as at least one of their measurement tools, with six out of seven of those questionnaires using a Likert scale. Of the papers that described consultations, novel, author developed coding or data collection tools were the most common, seen in seven out of 13 publications.

The outcome measures for success were predetermined by the authors in all four included papers. Client satisfaction was shown to be positively affected by interactivity, warmth and displays of empathy from

the vet (McArthur and Fitzgerald, 2013), while veterinary surgeon satisfaction was constructively influenced by client cooperation, an existing vet-client relationship and self-esteem levels of the vet (Shaw et al., 2012a). Compliance was associated with client satisfaction, the presence of a clear (rather than ambiguous) recommendation, a relationship-centred care approach to the consultation and displays of sympathy or empathy by the vet (Kanji et al., 2012). Compliance was also positively influenced by a client feeling that the vet had spent enough time with them during the consult (Grave and Tanem, 1999) or had not rushed the consult (Kanji et al., 2012). Figure 17 highlights the relationship between these success factors.

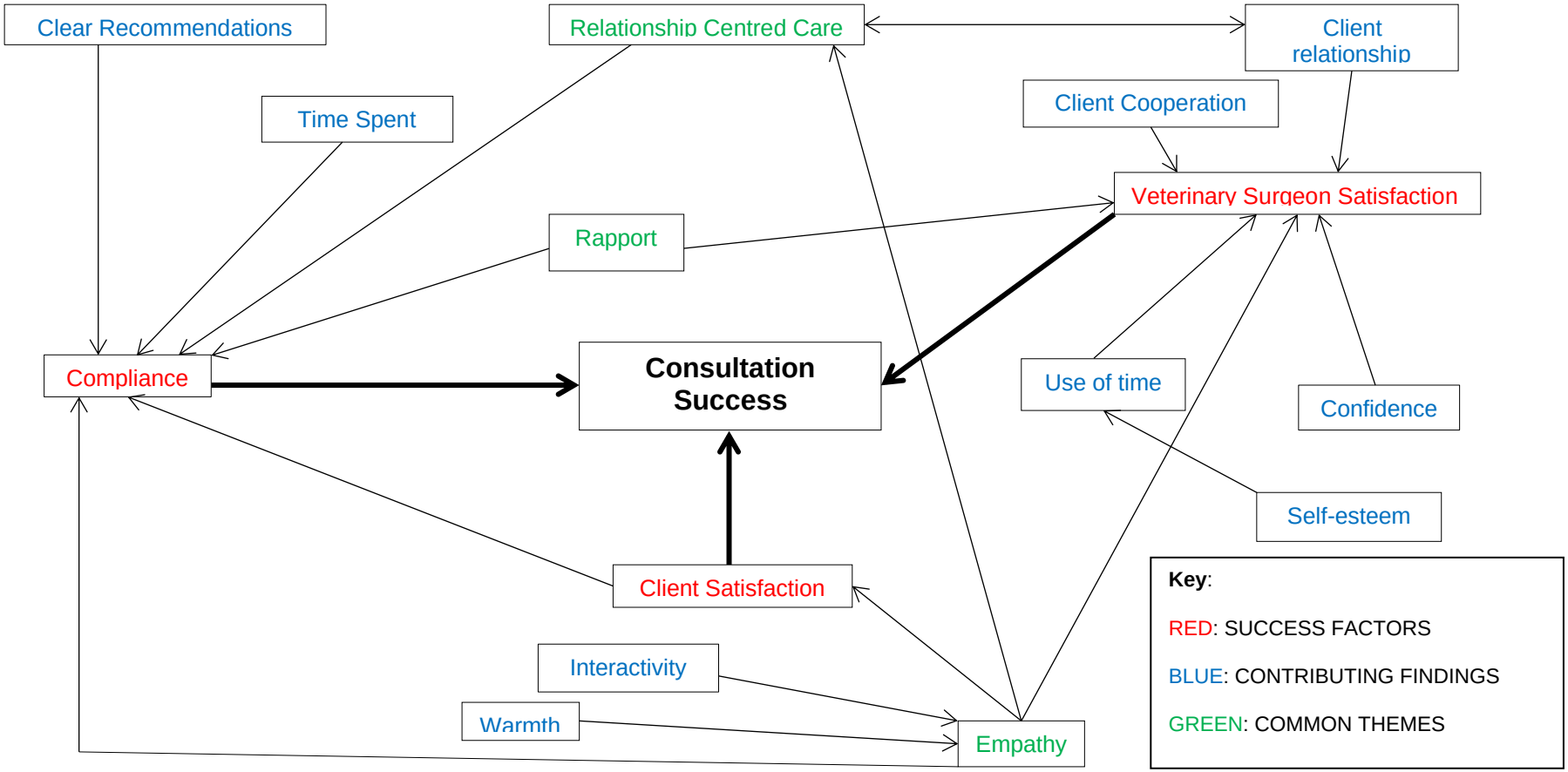


Figure 17: *Conceptual map of success factors*

Critical appraisal of the publications (Table 11) identified two out of four papers had unjustified and non-representative samples. One paper failed to report a response rate and in two of the papers, response rate was reported but there was concern regarding non-responder bias which led to questions around the generalisability of the studies.

The outcome measures used as proxy measures of success can be broadly split into compliance and satisfaction. There were no PBOMs reported. The measurement tools that were used to determine these measures of success are described in Table 12. The validity and reliability of the 11 measurement tools used across the included publications revealed only one tool with full validation in the veterinary literature. Five of the 11 tools were reported to have had some validation in veterinary literature while two outcome measures, relationship-centred care score and global affect rating (emotional tone), had no reported validity or reliability testing except in human medical literature. One measure, an owner reported pill count, had no validity or reliability reported although this would appear to have face validity. The remaining two out of 11 measures were appropriately validated in medical literature and had undergone no modification prior to their application.

Table 11: Critical appraisal of included papers

Question	Authors			
	Grave and Tanem (1999)	Kanji et al. (2012)	McArthur and Fitzgerald (2013)	Shaw et al. (2012a)
Were the aims/objectives of the study clear?	Yes	Yes	Yes	Yes
Was the study design appropriate for the stated aim(s)?	Yes	Yes	Yes	Yes
Was the sample size justified?	No	No	No	No
Was the target/reference population clearly defined? (Is it clear who the research was about?)	Yes	Yes	Yes	Yes
Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?	No	Yes	No	Yes
Was the selection process likely to select subjects/participants that were representative of the target/reference population under investigation?	No	Yes	No	Yes
Were measures undertaken to address and categorise non-responders?	No	Yes	No	No
Were the risk factor and outcome variables measured appropriate to the aims of the study?	Yes	Yes	Yes	Yes
Were the risk factor and outcome variables measured correctly using instruments/measurements that had been trialled, piloted or published previously?	No	Yes	Yes	Yes
Is it clear what was used to determine statistical significance and/or precision estimates (e.g. p values, CIs)	Yes	Yes	No	No
Were the methods (including statistical methods) sufficiently described to enable them to be repeated?	No	Yes	No	Yes
Were the basic data adequately described?	No	Yes	No	Yes
Does the response rate raise concerns about non-response bias?	Not stated	No	Yes	Not stated
If appropriate, was information about non-responders described?	No	Yes	No	Yes
Were the results internally consistent?	Yes	Yes	Don’t know	Yes

Were the results for the analyses described in the methods, presented?	No	Yes	No	Yes
Were the authors' discussions and conclusions justified by the results?	Don't know	Yes	Yes	Yes
Were the limitations of the study discussed?	No	Yes	Yes	Yes
Were there any funding sources or conflicts of interest that may affect the authors' interpretation of the results?	Don't know	No	No	No
Was ethical approval or consent of participants attained?	Yes	Yes	Yes	Yes

Table 12: Validity and reliability assessment of outcome measures

Author	Outcome measure for success	Measurement tools	Validity		Reliability
			Veterinary literature	Human literature	
Grave and Tanem (1999)	Compliance	Owner reported pill count	x	x	No formal measure
		Client telephone questionnaire	Face and content validity - pilot	x	No formal measure
Kanji et al. (2012)	Compliance	Roter Interaction Analysis System	Face validity	✓	Acceptable inter-rater reliability (Shaw et al., 2004b)
		Relationship-Centred Care score	x	Face validity. Poor construct validity (Mead and Bower, 2000)	Acceptable intra-rater reliability (α=0.71 reported in medical literature (Mead and Bower, 2000))
		Global Affect Rating (Emotional tone)	x	Face validity	Acceptable for patients (α=0.72), poor for physician (α=0.54) reported in medical literature (Hall et al., 1981)
		Client Satisfaction Questionnaire	Fully validated (Coe et al., 2010)	x	G coefficient 0.7
McArthur and Fitzgerald (2013)	Client satisfaction	Roter Interaction Analysis System	Face and content validity	✓	Excellent inter-rater reliability (α0.9 - 1)
		Global Affect Rating (Emotional tone)	x	Face validity	Acceptable for patients (α=0.72), poor for physician (α=0.54) reported in medical literature (Hall et al., 1981)
		Consultation and relational care measure	Content validity	✓	Excellent (α=0.96)

		Global satisfaction measure	Face and content validity	✓	Excellent (α=0.92)
Shaw et al. (2012a)	Veterinary surgeon satisfaction	Rosenberg self-esteem scale	N/A	✓	Yes
		Interpersonal reactivity index (empathic concern and perspective taking scales)	N/A	✓	Satisfactory (medical)
		Roter Interaction Analysis System	Face and content validity	✓	Acceptable inter-rater reliability
		Global Affect Rating	X	Face validity	Acceptable for patients (α=0.72), poor for physician (α=0.54) reported in medical literature (Hall et al., 1981)
		Veterinarian visit-specific satisfaction	Face validity	✓ (Suchman et al., 1993)	Vet-client relationship α=0.82, data gathering α=0.69, effective use of time α=0.52, cooperative client α=0.7

(Reliability values are reported in the table as published; N/A = not applicable; x = no validity assessment reported in the publication)

4.4 Discussion

This review has highlighted the limited amount of peer-reviewed literature examining small animal, health problem veterinary consultations. What is available is of variable quality and provides weak evidence as to what factors contribute to a successful consultation. In addition, many of the included papers examined populations outside of the United Kingdom and so caution is required with any generalisation of the results to different geographies.

4.4.1 Study type

All included papers in this review were cross-sectional studies. The advantages of this study type include the relatively low cost and the ability to study multiple outcomes with a single data collection (Mann, 2003). The choice of this study design for all of the included papers was entirely appropriate given the observational and descriptive requirement of assessing or describing a consultation. However, there are some inherent limitations with this study type (Mann, 2003) such as selection, confounding and response bias.

4.4.2 Sampling strategies

The random sampling of veterinary surgeons performed by Kanji et al. (2012) and Shaw et al. (2012a) mean that the results may be representative and generalizable, despite their small sample sizes and limited geographic area. However, this assumes that the responders were also representative of the Canadian consulting veterinary

population. Several papers reported a low response rate, which may mean that significant differences between those that responded and those that did not could have been missed. One paper (McArthur and Fitzgerald, 2013) reported a self-selection bias – the respondents may not have been representative of a general population of veterinary surgeons.

4.4.3 Analysis tools

Due to the limited depth of the research field, there have been no widely used, veterinary specific consultation analysis tools developed. The analysis tools chosen by the included publications were largely tools validated for use with medical consultation models, with a focus on consultation communication. These tools operate on the assumed similarities between medical and veterinary consultations. However, as argued in the narrative review, there are differences between these interactions and so without full veterinary validation, this equivalence cannot be relied upon. The methodological tools most frequently used by the included papers are discussed in more detail below.

4.4.3.1 Roter Interaction Analysis System and Relationship Centred Care Score

A discussion of the Roter Interaction Analysis System (RIAS) and the Relationship Centred Care Score (RCC score) have already been presented in chapter two as part of the narrative literature review. However, there are further analyses that can be conducted using the RIAS methodology, namely the Global Affect Rating (GAR). Whilst GAR

was described in the literature review, a more in-depth appraisal of this tool is required.

4.4.3.2 Global Affect Rating

Using a numerical scale, Global Affect Rating assesses the emotional tone of the vet and client during the consultation, subjectively based on the overall impression of the coder. Three of the papers measuring success (Kanji et al., 2012; McArthur and Fitzgerald, 2013; Shaw et al., 2012a) used GAR. GAR scores qualitative aspects of the consultation and the perceived affective responses, for example anger or sympathy. These scores are then correlated with patient satisfaction.

Through the use of GAR, empathy was shown to correlate with improved compliance (Kanji et al., 2012), client satisfaction (McArthur and Fitzgerald, 2013) and veterinary surgeon satisfaction (Shaw et al., 2012a). However, the subjectivity of this tool raises some concerns. Hall et al. (1981) reported that three emotions - anxiety, dominance, and assertiveness were often mistaken for anger by both physicians and patients. Whilst this supports the necessity of clear communication in a consultation, it calls into question the validity and reliability of this measure due to its subjectivity.

4.4.3.3 Consultation and relational empathy measure

The consultation and relational empathy (CARE) measure (Mercer et al., 2004), modified for veterinary consults (McArthur and Fitzgerald, 2013), assesses the quality of a consultation using the patient's

perception of empathy displayed by the doctor using Likert scales. It is an indirect consultation assessment tool relying on the client's subjective assessment of one aspect of the consultation – the empathy displayed to them. There have been no comparative validity assessment performed between the CARE measure and global affect rating but it must be noted that the CARE measure would seem to have superior validity and reliability having been fully validated in the human medical literature (Mercer et al., 2004).

4.4.3.4 Questionnaires

The use of questionnaires is common for quantifying opinion in healthcare research. The majority of publications measuring consultation outcome via questionnaires used Likert scales to quantify the preferences or attitudes of the respondent; Through the use of Likert scales, researchers aim to obtain objective measurements of these attitudes and beliefs.

Likert scales have distinct advantages; they are easy for the respondent to complete which can lead to a good response rate (Ryan et al., 2001) and they provide flexibility in the response whilst allowing a quantitative analysis (Cohen et al., 2017). However, Likert scales have been shown to have numerous limitations. Whilst there are discreet response categories, the intervals between each cannot be assumed to be equal (Jamieson, 2004) and the categories may be conceptually different to different respondents (Cohen et al., 2017). Respondents may avoid

extreme responses (central tendency bias) or choose to conceal their true opinions (Cohen et al., 2017). Furthermore, it has been shown that scales with the highest numerical rating and a positive label on the left produced significantly higher ratings than other configurations (Hartley and Betts, 2010); the format of the question will affect the answer given. Therefore, the validity of a Likert scale may be difficult to demonstrate.

There are two differing theories regarding the nature and subsequent statistical analysis of Likert scales. (Jamieson, 2004) argues that Likert scales are ordinal and so should be analysed with non-parametric statistical tests whilst Pell (2005) and Carifio and Perla (2008) argue that it can be acceptable to apply parametric tests to the same non-parametric data, provided that the assumptions are clearly stated, and the data is normally distributed, linear, independent and homoscedastic (all variables have the same, finite, variance).

Both Kanji et al. (2012) and McArthur and Fitzgerald (2013) report the use of positively-skewed Likert scales. When using a positively skewed scale, the data cannot be normally distributed and therefore the application of parametric statistical tests is inappropriate. Whilst Kanji et al. (2012) used the non-parametric Kolmogorov-Smirnov test to determine the distribution of the variables before performing further statistical analysis, McArthur and Fitzgerald (2013) did not examine the distribution of their data before further analysis. Therefore, caution must

be used when interpreting the results of client satisfaction with veterinary surgeon-expressed empathy.

4.4.4 Outcome measures

The outcome measures identified in this review examine vet and client perspectives of success in terms of compliance, client satisfaction and veterinary surgeon satisfaction and can be split into direct and indirect measures (Robinson, 2014). However, the subjective nature of some of the indirect outcome measures should not be ignored as it could affect their validity. For example, client satisfaction could reflect whether the veterinary surgeon has met that client's expectations, rather than if a favourable medical outcome has been achieved for the patient.

The reported outcome measures for success focused on the client (client satisfaction), the vet (vet satisfaction) or a combination of the two (compliance). Interestingly, and perhaps surprisingly, there were no outcome measures reported examining patient outcomes. It should be assumed that health and welfare of our veterinary patients are at the forefront of every consultation with the anticipation that the best patient outcome occurs every time. Unfortunately, the measurement of PBOMs is fraught with difficulties due to the difficulty of assessing validity, reliability and appropriateness of any tool (Long and Dixon, 1996).

Compliance and satisfaction have been used as a proxy for a successful consultation, however, what we do not know currently is if

these are good measures of success or even the complete picture. As all success factors were pre-determined by the authors, what has been assessed is based upon researcher assumption as to what constitutes success. The complex nature of the consultation (Everitt et al., 2013) suggests that there may well be more facets to a successful consult which have yet to be identified or measured.

4.4.5 Reporting

The identified studies had a number of weaknesses therefore the findings of the studies are questionable. In addition, a number of studies were not reported in accordance with published reporting guidelines for cross-sectional studies, for example the STROBE checklist (von Elm et al., 2007) and this corresponds with the findings of other veterinary reviews (Belshaw et al., 2016).

4.4.6 Limitations

This review has met its aims of allowing for a preliminary assessment of the extent of the literature, but it is possible that further evidence could have been discovered if using fewer exclusion criteria.

The search databases selected were chosen to allow for the most comprehensive coverage of veterinary journals but no database combination produced 100% coverage (Grindlay et al., 2012).

In CAB abstracts, the terms were combined with the veterinary subset, ve.ss to limit search results to those related to veterinary medicine. The veterinary subset is not a feature in MEDLINE and so the terms were combined with vet$ to achieve a similar outcome, however this could have affected the results returned.

Other potential limitations of the study include the application of the eligibility criteria by a single author; the sheer number of results made the possibility of a mistake or miscategorisation of a paper more likely. A random sample of 10% was checked by a second author with complete concordance. This suggests that the protocol was unambiguous and the likelihood of a mistake lower. Finally, the search terms were not optimised; meaning that an alternative search strategy had the potential to alter the results returned.

4.5 Conclusion

The findings suggest that there is limited and low-quality evidence regarding the measurement of success in the small animal consultation. Compliance and satisfaction have been examined as outcome measures for success in veterinary consults and linked with empathy, rapport and relationship-centred care. Further work is required to identify additional factors contributing to success and ascertain how they could be assessed. The use of empathy, a relationship-centred approach and good rapport in the consult may affect its success, but

larger studies of improved quality need to be performed before firm conclusions can be drawn.

The identification and quantification of consultation outcome measures currently recognised in veterinary medicine will inform the subsequent research questions for this thesis, providing a foundation for improving the consultation and therefore patient outcomes. The identification of existing measures could allow their use in a consultation assessment study and will allow validation of any novel assessment tools developed. The next chapter will aim to gather key stakeholder opinions regarding consultations via qualitative methods; focus groups and semi-structured interviews.

5 What happens in a good consultation? Stakeholder observations and experiences



5.1 Introduction

The systematic review examining measurements of success in small animal veterinary consultations, reported in the previous chapter, highlighted the scope of the current peer-reviewed literature available in English and identified significant knowledge gaps. In summary, the available evidence measuring success in the small animal consultation is limited and of low quality. Compliance and satisfaction were the only outcome measures reported and there were no patient-based outcome measures reported.

This chapter presents the second study of this thesis, and the first empirical research chapter: a qualitative investigation into what factors are deemed important in small animal consultations by consultation stakeholders. In this chapter the first thesis question, ‘what is the definition of a ‘good’ consultation?’ will be addressed, allowing the second thesis question, ‘how could we measure it?’ to be addressed in chapter six.

This chapter will argue that the success of a consultation hinges on the decisions made within it, and that there are numerous contributors to achieving optimum decision-making. Furthermore, it will argue for a reframing of shared decision-making, and a greater emphasis within the veterinary undergraduate curriculum.

5.1.1 Overview and relevance

Research examining small animal consultations as a whole, rather than just published measurements of success have been identified, in both the systematic and the literature review process.

There has been a body of consultation research conducted in the US and Canada primarily examining the communication processes of small animal consultations using a variety of methodological approaches including; consultation recording (Dysart et al., 2011; Kanji et al., 2012; Shaw et al., 2012b, 2008, 2006), undisclosed standardised clients (Borden et al., 2019, 2010) and stakeholder focus groups (Coe et al., 2009, 2008, 2007; Stoewen et al., 2014). However, it is unclear whether the intervening time since the research was conducted, allow the findings to be extrapolated. Furthermore, it is currently unclear as to the level of overlap between the contexts of the UK and North America. Whilst there will undoubtedly be numerous similarities, there may be contextual differences meaning that caution must be exercised when extrapolating the results.

In addition, numerous papers examining the small animal preventative medicine consultation in the UK have recently been published, again using a variety of methodological approaches. These papers highlighted the differences in consultation content (Belshaw et al., 2018b; Robinson et al., 2019) and described stakeholder attitudes (Belshaw et al., 2018a, 2018d, 2018c), culminating in the development of a set of

recommendations (Belshaw et al., 2019). Whilst these papers provide much to reflect upon, in the context of SHP consultations, it is important to note that preventative medicine consultations have been identified as being fundamentally different in terms of their content, duration and communication patterns (Kleen et al., 2011; Robinson, 2014; Shaw et al., 2008). Therefore, generalisation of all findings may not be appropriate for SHP consultations.

Mellanby et al. (2011) surveyed the opinions of vets and clients to elicit what attributes were considered fundamental to being a ‘good’ vet. Interestingly, whilst there was overlap between stakeholders, highlighting the importance of many of the attributes in the survey, clients and vets differed when it came to rank them; vets considered communication skills as the uppermost attribute, whilst clients preferentially rated veterinary knowledge. Whilst many of these veterinary surgeon attributes are likely to be important to the consultation, it is currently unclear to what extent the ‘good’ vet and the ‘good’ consult overlap.

There has been a minimal amount of research examining what constitutes a ‘good’ medical consultation. Andersson and Mattsson (1994) reported that the doctor themselves was the critical factor for achieving a ‘good consult, while Arborelius and Bremberg (1992) cited the importance of eliciting the patient concerns and involving them in the treatment in order to achieve consultation success. Indeed, patient

perspective is now considered to be as important as clinical success in terms of high quality healthcare (Department of Health, 2008) and is fundamental to the practice of EBM (Sackett et al., 1996). However, patient experience data has yet to be given the same gravitas as traditional scientific research, despite its fundamental importance (Sibley, 2019). Efforts are now being made in both the human and veterinary fields to showcase the patient (or client) 'voice' through the publication of patient/client-authored opinion pieces (Belshaw, 2017). Furthermore, there is now an online database (www.patientlibrary.net/) containing thousands of texts relating to patient experience and patient involvement in their own healthcare decisions (Sibley, 2019). Despite this, client perspective research remains in its infancy, particularly for veterinary medicine. Whilst research undertaken in the UK and North America has begun to tackle this rift, for example research by Belshaw et al. (2018d) and Coe et al. (2008), significant gaps remain in the knowledge-base.

5.1.2 Aims

The aim of this study is to gather a range of stakeholder opinions and experiences of small animal consultations, with the objective of further defining the attributes of the 'good' small animal consultation.

Reporting of this study follows the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines (Tong et al., 2007).

5.2 Methods

5.2.1 Study design

5.2.1.1 Theoretical framework

This study has been conducted with a structural realist ontology and a post-positivistic theoretical perspective. Data was collected using focus groups (FGs) and semi-structured interviews (SSIs) and analysed using Thematic Analysis (Braun and Clarke, 2006). A more detailed discussion of ontology, epistemology and theoretical frameworks is available in Chapter 3: Methodology.

5.2.1.2 Research team and reflexivity

A single author (LC, the author of this thesis) organised and conducted all data collection and analysis for this study. A detailed reflexivity statement can be found in Chapter 3.

In general, a relationship was not established with any of the participants prior to the beginning of the FG or SSI, except to arrange the date and time with the participants. However, one focus group took place at a practice where the researcher had previously been employed. This focus group included four previous work colleagues; however, it also facilitated the addition of a second charity practice, expanding the data set.

Participants were made aware of the broad goals of the research and that the researcher was a veterinary surgeon undertaking a PhD. The

information sheet and consent forms provided to client and vet participants are available in Appendix 4 and 5.

5.2.1.3 Ethical considerations

This study was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2013) and the School of Veterinary Medicine and Science Statement of Research Ethics - for data collection by questionnaire, interview or focus group (Appendix 3). To this end, the research protocol was submitted to the Research Ethics Committee at the School of Veterinary Medicine and Science, University of Nottingham. Written informed consent was gained from all participants upon arrival at the focus group. Participant privacy and confidentiality were maintained by anonymising transcripts through the removal of any reference to the names of participants, pets, veterinary surgeons, veterinary practices and locations. Participants were also reminded that they could withdraw consent at any point before, during or after data collection up until research publication.

All data were stored securely in accordance with University of Nottingham research policy. In addition, consent forms were stored securely and separate to all data, including participant details, audio recordings and written transcripts.

Some veterinary practices requested feedback regarding the content of the client focus groups. If this was requested, feedback given was short,

anonymous and non-specific, e.g. that the group had discussed euthanasia or their ability to book an appointment. In addition, client participants were made aware that this level of feedback would be given to the practice.

Finally, all participants were given contact details of the researcher, her supervisors and the school, should they have any questions following the focus group. They were also given the option to receive a copy of a research findings summary once research was complete.

5.2.1.4 Participant selection

A convenience, purposive sample of veterinary surgeons and clients were invited to participate in focus groups and semi-structured interviews between January and June 2017 in the United Kingdom. Participation was voluntary and all participants received refreshments during the groups, but no financial contribution was offered in recompense for their participation.

Prior to recruitment, sampling frames were devised. The frames comprised numerous demographic differentiators, for example age and gender, along with stakeholder specific differentiators such as the role of the pet or postgraduate communication skills training, allowing the broadest range of consultation experiences to be gathered.

Table 13 and Table 14 outline the sampling frames employed.

Table 13: Sampling frame for veterinary clients

Variable	Response category
Gender	Male, Female, Non-binary/third gender, prefer not to say
Age	18-35, 36 – 59, ≥ 60, prefer not to say
Children under 16 living at home	Yes/no
Location	Rural, Suburban, Urban, Other (specify)
Type of pet	Cat(s), Dog(s), Cat(s) and Dog(s), Other
First pet	Yes/No
Insured	Yes/No
Role of animal	Pet, Working, Other (specify)
Practice attended	Free text

Table 14: Sampling frame for veterinary surgeons

Variable	Response category
Gender	Male, Female, Non-binary/third gender, prefer not to say
Age	18-35, 36 – 59, ≥ 60, prefer not to say
Time since graduation	Free text
Place of qualification	Free text
University communication skills training	Yes, No, Unsure/don't remember
Description of training	Free text
Post qualification communication skills training	Yes, No, Unsure/don't remember
Description of training	Free text
Further veterinary qualifications	No, Yes (Certificate/diploma), Yes, other (specify)
Type of practice	Small animal, Mixed, Other (specify)
Role in practice	Assistant, Partner/Clinical director, Other (specify)
Practice ownership	Corporate, Charity, Independent, Other (specify)
Location	Rural, Suburban, Urban, Other (specify)

Client recruitment was conducted via social media posts, through the direct email contact of enthusiast groups, through veterinary practices participating in the study and through the use of snowball sampling; where eligible participants recruit additional participants through their own social networks. Client participant inclusion criteria were as follows:

1. That the client personally owned at least one cat or dog

2. That the client had personally attended a veterinary consultation with their own pet prior to participating in the focus group
3. That they were available and willing to participate

Veterinary surgeon recruitment was conducted via social media posts, through direct contact with practices known to the researcher, and through the use of snowball sampling. Inclusion criteria were as follows:

1. That they personally undertook first-opinion small animal consults on a regular basis
2. They were available and willing to participate

In addition, other members of the practice team, such as practice managers, receptionists and veterinary nurses were welcomed at the groups if they wished, again utilising a convenience sampling strategy.

5.2.1.5 Setting

Data were collected at veterinary clinics, enthusiast events and in the homes of clients. On two occasions children were present with their parents. In these cases, the parents gave permission for focus group recording and the children did not participate in the discussion. The date and location of the focus group were recorded, and demographic questionnaires were presented to participants for completion prior to the focus group (Appendix 6 and 7).

5.2.1.6 Data collection

A list of broad, open questions was compiled in order to address the research question of the thesis, with the aim of stimulating the discussion organically to generate ideas and elicit participant experiences of ‘good’ and ‘bad’ consultations. From these questions, a discussion guide, appropriate for all participants was developed (Appendix 8). The discussion guides were kept purposefully vague allowing for an inductive approach to the research question, and a modified nominal group technique was used to stimulate the initial discussion.

There were no repeat interviews or focus groups and data collection continued until theoretical saturation was reached.

5.2.1.7 Pilot

In order to test the feasibility of the discussion guide, a pilot focus group was undertaken. The group consisted of a convenience sample of qualified, small animal veterinary surgeons, with recent small animal clinical experience, working at the School of Veterinary Medicine and Science, University of Nottingham and was held in November 2016.

Upon arrival, room was set up so that participants were seated in a circle with the focus group facilitator. Data was audio recorded using two Dictaphones (Olympus VN-711PC) placed on a stool in the centre of the circle. Figure 18 details the room set up.

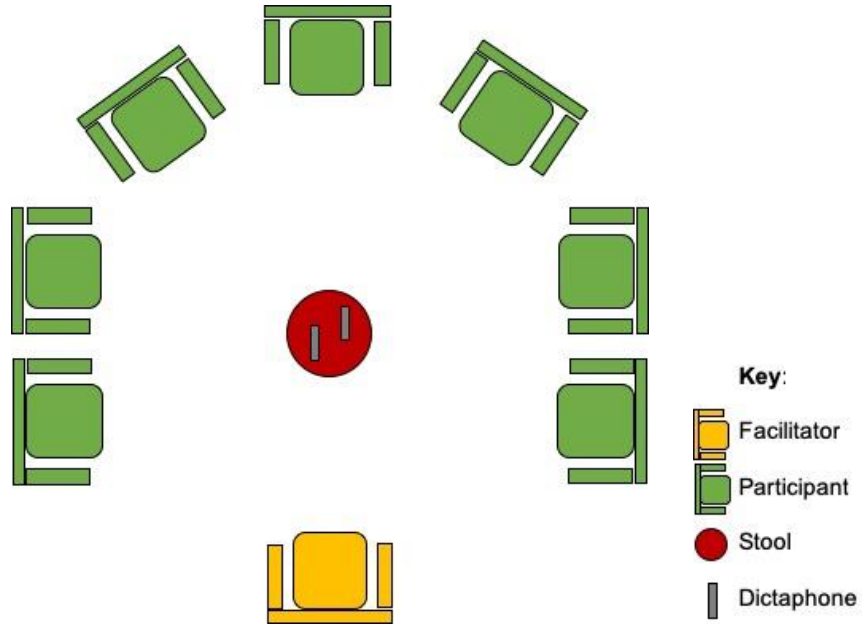


Figure 18: *Focus group seating arrangement*

The group began with participant and facilitator introductions to facilitate rapport and an explanation of the focus group procedure. A modified nominal group technique was then employed to open the discussion.

The nominal group technique (NGT) was first described by Van de Ven and Delbecq (1972) and is the process of individual idea generation, followed by group discussion and idea ranking. Advantages of using an NGT include limiting the effect of “dominant” group participants, the creation of a high volume of ideas, and minimising the “focus effect” (the pursuit of a single idea by a group) (Gallagher et al., 1993).

However, it was felt that the process of ranking the ideas raised was unnecessarily limiting for this study, because consultation experiences are complex and subjective. Therefore, a modified NGT was performed with the steps as follows:

1. Each participant given a pen and paper
2. Participants given approximately five minutes to write down three factors contributing to a ‘good’ consultation experience along with and three things contributing to a bad consultation experience (individually)
3. Group discussion, participants take turns to share an item from their list with the group, with subsequent discussion.
4. Process continues until every item has been discussed

The modified NGT was followed by supplementary questions in line with the discussion guide until all questions had been addressed. Finally, the focus group was closed by asking participants to define a ‘good’ consultation in one sentence. Participants were then given the opportunity to raise any additional points that they felt had not been covered by the discussion. Following the group, field notes were made by the researcher to assist with clarification during analysis.

Following the completion of the group, no alterations to the focus group procedure, room set up, or discussion guide were required. To this end, pilot data was included in the full analysis.

5.2.2 Data analysis

5.2.2.1 Transcription

Transcription was carried out by a combination of the researcher (LC) and an online transcription service[8]. Transcription was intelligent verbatim with filler words removed (e.g. “umm” and “err”). However, grammatical errors were left as part of the transcription to ensure that transcription remained both accurate and representative (Braun and Clarke, 2006). In addition, all files transcribed by the external service were reviewed against the audio recording and corrected as necessary by LC. Transcripts were not returned to the participants for comment or correction.

5.2.2.2 Coding

Transcripts were uploaded to NVivo[9] for data management and to facilitate the coding process. Coding was both inductive and deductive, with deductive codes utilising the outcomes of the systematic review (Corah et al., 2018) and the CCROG adapted for veterinary medicine (Radford et al., 2006).

Granular coding of a single transcript was performed by the researcher and a codebook developed. Subsequently, a secondary coder (LM) used the codebook to code the same transcript. Once this had been completed, both coders met to discuss concordance and further define and refine the codes. However, no additional double coding was

[8] www.rev.com, San Francisco, CA
[9] NVivo qualitative data analysis software; QSR International Pty Ltd. Version 11

performed for reasons outlined by Morse (1997), and previously discussed in chapter 3. Following the discussion between LC and LM, all transcripts were coded in full, inductively identifying new codes and revisiting transcripts in an iterative fashion to ensure newly defined codes were not present in the previously coded transcripts.

Codes were inductively grouped into subthemes which were repeatedly reviewed and regrouped by the researcher. Finally, themes and subthemes were mapped to allow visualisation of the interplay between them and create a consultation model.

5.3 Results

5.3.1 Demographic results

5.3.1.1 Vets

Thirteen focus groups were conducted with veterinary surgeons between November 2016 and June 2017. The number of participants in the groups ranged from two to nine. In addition to the vet participants, there were two veterinary nurses present and contributing to the discussion in practice 10, and two practice managers present and contributing to the discussion in practice 2. The predominant focus of all participating practices was first opinion, primary care.

Table 15 outlines the demographic results for veterinary participants.

Table 15: Demographic results for veterinary participants

	Response categories	Results
Gender	Male	34.8% (n=23)
	Female	65.2% (n=43)
Time since graduation		Range: 6 months – 34 years
Place of qualification	UK vet school	83.3% (n=55)
	Europe	13.6% (n=9)
	Non-UK, Non-Europe	3.0% (n=2)
University communication skills training	Yes	60.6% (n=40)
	No	28.8% (n=19)
	Unsure	10.6% (n=7)
Post university communication skills training	Yes	53.0% (n=35)
	No	47.0% (n=31)
Further qualifications	Yes	33.3% (n=22)
	No	66.7% (n=44)
Type of practice	Small animal	93.9% (n=62)
	Mixed animal	6.1% (n=4)
Role in practice	Salaried assistant	72.8% (n=48)
	Partner/Clinical director	19.7% (n=13)
	Managing director	1.5% (n=1)
	Locum	1.5% (n=1)
	No response	4.5% (n=3)
Ownership of practice	Charity	15.4% (n=2)
	Corporate	30.8% (n=4)
	Independent	53.8% (n=7)

5.3.1.2 Clients

Eight focus groups and three semi-structured interviews were conducted with pet owners between November 2016 and June 2017. The number of participants in the focus groups ranged from five to twelve. Table 16 outlines the demographic results for client participants.

Table 16: Demographic results for client participants

Question	Response categories	Results

Gender	Male	18.8% (n=12)
	Female	81.2% (n=52)
Age	18-35	7.8% (n=5)
	36-59	42.2% (n=27)
	≥ 60	50.0% (n=32)
Children under 16 living at home	Yes	9.4% (n=6)
	No	90.6% (n=58)
Home location	Rural	50.0% (n=32)
	Suburban	25.0% (n=16)
	Urban	21.9% (n=14)
	Other	3.1% (n=2)
Type of pet owned	Cat(s)	20.3% (n=13)
	Dog(s)	54.7% (n=35)
	Cat(s) and Dog(s)	21.9% (n=14)
	No response	3.1% (n=2)
First pet?	Yes	6.3% (n=4)
	No	90.6% (n=58)
	No response	3.1% (n=2)
Insured?	Yes	68.8% (n=44)
	No	28.1% (n=18)
	No response	3.1% (n=2)
Primary role of animal	Pet	92.2% (n=59)
	Showing	1.6% (n=1)
	Sporting	3.1% (n=2)
	No response	3.1% (n=2)

5.3.2 Thematic analysis

Thematic analysis identified six major themes; ‘Relationships, ‘Communication’, ‘Process’, ‘Animal welfare’, ‘Context’ and ‘Decision-making’. The decision-making process of the consultation was found to be central with the remaining five themes found to be contributory (Figure 19). Each theme will be explored separately in the subsequent subsections with example illustrative quotes.

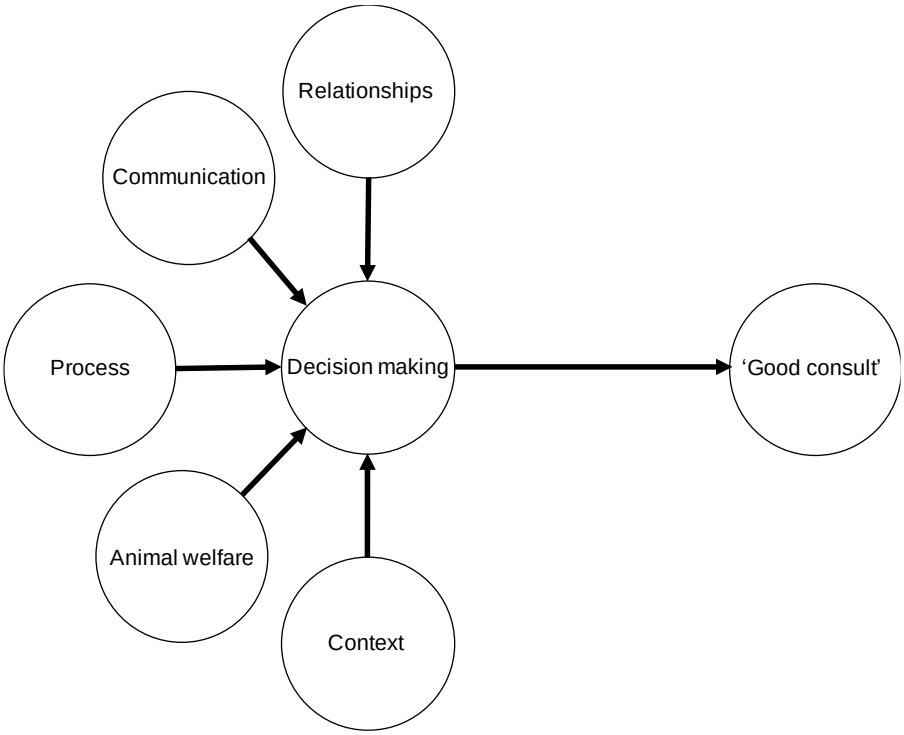
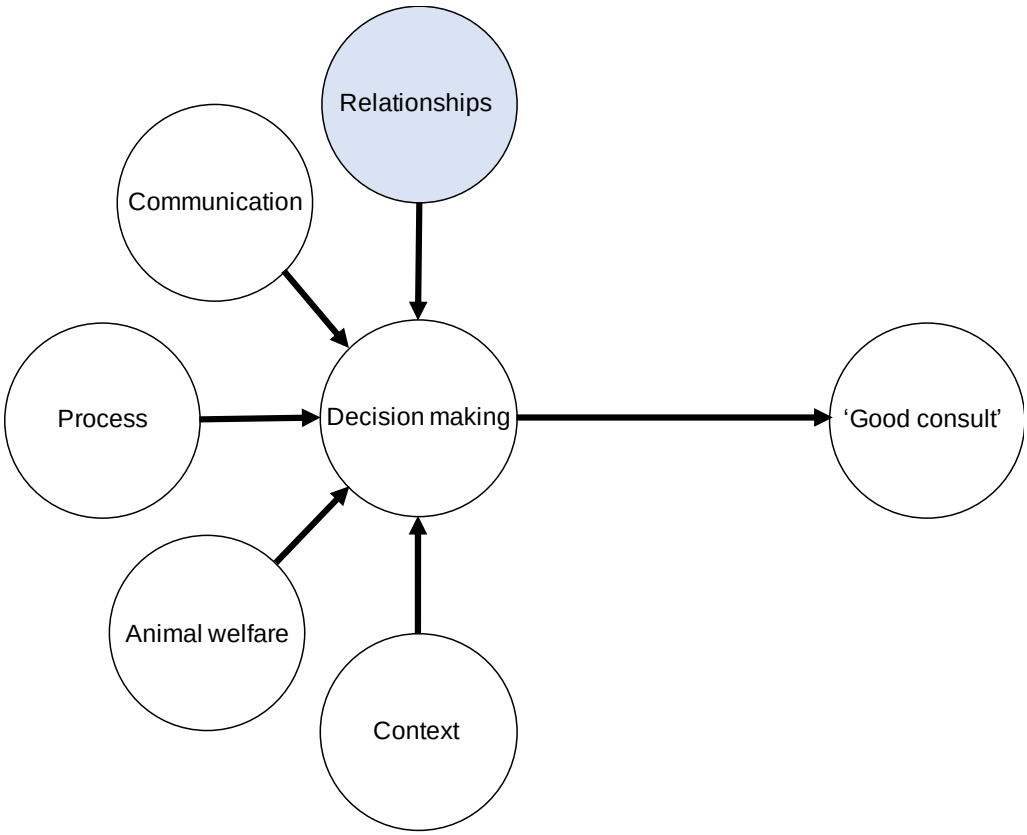


Figure 19: *Thematic map: the 'good' consultation*

5.3.2.1 Relationships



Six distinct relationship pairs were identified within the consultation; vet-client, vet-pet, vet-practice, client-pet, client-practice and client-profession. All pairs were found to be reciprocal with the exception of client-profession, which was considered to be a one-directional relationship in terms of the impact upon the consultation (Figure 20).

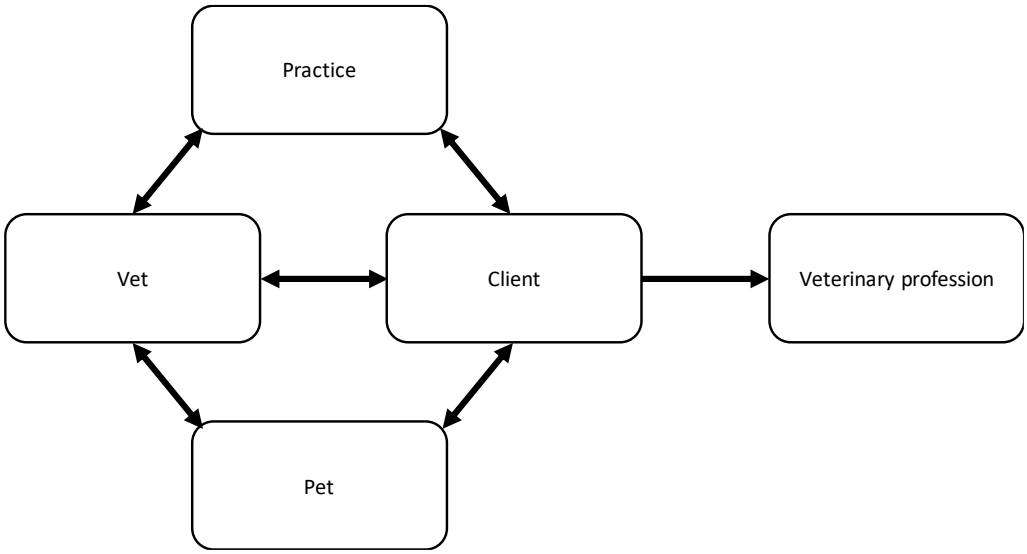


Figure 20: *Relationships present in the small animal consultation*

Both clients and vets highlighted the importance of trust in the vet-client relationship. Interestingly, trust was described as a two-way paradigm by many participants, with trust necessary from vet to client as well as from client to vet. Trust was acknowledged to facilitate decision-making, particularly in high-emotion and uncertain situations such as euthanasia or complex conditions.

"If you do have the confidence of the owner, you can work around any difficulty in the worst of the cases"
– Transcript 3 (vet)

Trust was reported to require communication, competence and rapport at the minimum, but was strengthened through a positive vet-client relationship and continuity of care. Trust was also acknowledged to increase with the length of the vet-client relationship and be linked to adherence.

"… in any practice vets will retire, will come and go, and if you want an emergency appointment you won't already know them necessarily. But I'm just so much happier if I walk in the door and it's one that I see regularly or have seen before."
– Transcript 9 (client)

Some vet participants noted a perceived lack of trust in the vet from clients. However, this was not mirrored by the client participants, with the majority reporting that they trusted their own vet. Finally, some participants reported using 'low stakes' consultations such as annual booster vaccinations as a means of building trust between a new vet and client.

"If I make an annual vaccination appointment, I don't specify cause that's the sort of opportunity where I think 'oh, I can be brave', this isn't anything that important they can all do a vaccination and then I might or might not meet somebody new"
– Transcript 9 (client)

Financial factors were a significant cause of client mistrust in the veterinary profession. In addition, there were some concerning misconceptions regarding pet insurance, with some clients finding the

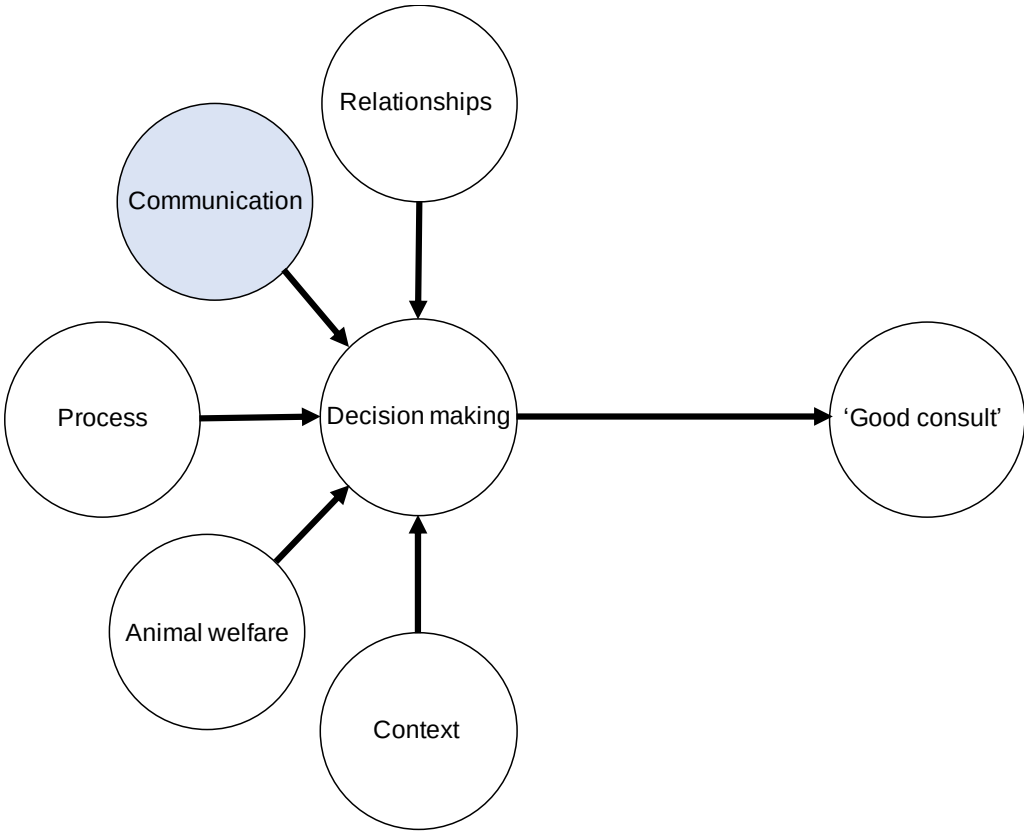
communication around insurance and the price of veterinary care created anxiety and animosity towards the profession.

“My opinion, I'm probably wrong here, but my opinion on vets and on insurance is that it's a money-making machine.”
– Transcript 10 (client)

Furthermore, some clients raised concerns that a lack of pet insurance would affect the quality of treatment, whilst others raised concerns that admitting to having insurance would raise the cost.

“I sometimes feel like when they ask you ‘are you insured?’ If you say yes, you're going to get better treatment than if you say no”
– Transcript 16 (client)

5.3.2.2 Communication



Discussions about communication featured frequently across all groups. Communication was described by the participants as a two-way paradigm, with a shared responsibility between vets and clients. The communication and demonstration of care was deemed very important by both stakeholder groups, extending beyond care for the pet, with care for the client also seen as essential.

"I just burst into tears as soon as I handed her over […] and they were just amazing to me, so, you know, I just think that's priceless. The way they looked after me, as well"
– Transcript 7 (client)

Clients reported numerous communication preferences including overt, clear and candid communication, and the use of multiple information formats such as diagrams, emails and handouts. In addition, clients reported a strong preference for reasoned communication; it was not enough for a vet to communicate examination findings or options, the client desired the reasoning behind those things. Once again, communication was linked to adherence.

"To talk through the rationale for the various different suggestions of what needs to happen. Not just to say, well, we could do this, we could do this, we could do this. But why, to help you to be able to make a decision"
– Transcript 18 (client)

Vets reported disliking cost discussions, with many reporting that they found financial communication difficult. In addition, many vets raised the

importance of avoiding assumptions and keeping an open mind when delivering options to clients. Both vets and clients described the important difference between the value of treatment and the price, with reasoned communication leading to improved client understanding and improved satisfaction with the cost of veterinary treatment.

“Value for money. I think that's massive one because if you walk into a consult, and you're in there five minutes, and you walk out with a 150 quid bill, you're like, "Ehhhh what was that for?" If you go in, you come out with knowledge of knowing what's been given, what's been done, what you're taking home, what your options are, but then you pay, you think, "Actually, that's all right." You don't mind it.”
– Transcript 12 (client)

Listening was regarded as a fundamental part of communication across all processes of the consultation. Finally, some clients reported that they found it difficult to notify the vet if they did not understand, particularly when receiving difficult or complicated diagnoses for their pet.

“I was in so much grief and listening to so much that I didn't understand, that I didn't feel that I was even in a place to be able to say, I don’t understand. […] Then walking out and sitting in the car thinking, I have no idea now. I just know she’s dying. That kind of thing. It’s not intentional, sometimes, not intentional at all. It’s just full-on jargon”
– Transcript 18 (client)

However, numerous barriers to communication were cited by both groups of participants. The impact of time constraints was felt by both vet and client participants, with vets and clients reporting having felt

rushed sometimes, affecting client understanding. In addition, both groups of participants raised the difficulties sometimes posed to communication when one or more participants employed English as a second language.

"I think it is just rushing and you just feel that you haven't been listened to. You go and you come out not really knowing. You come out with tablets for a week, well what do I do next? And it is almost like they're getting somebody else in, it's not like you've been fitted in, it's not an emergency, you've got an appointment, but if they've got overrun it's quite apparent that it's just in and out and that's not good."
– Transcript 16 (client)

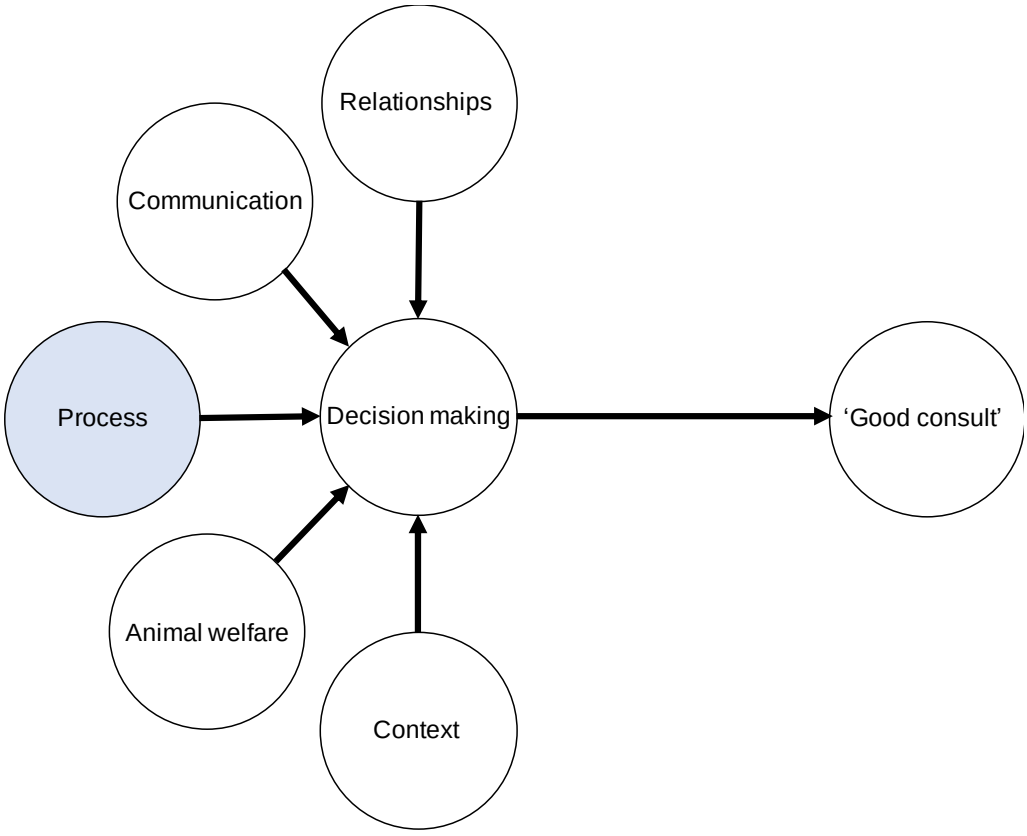
Veterinary participants reported that the absence of the primary decision-maker, or presence of additional contributors to the consult, such as children, friends or family members, posed a significant barrier to effective communication. In addition, some vets spoke of individual client factors (e.g. dementia, disability) having the potential to impact negatively on consult communication. However, many also spoke of providing additional time and support for such consultations where possible (e.g. relaying the information via telephone to a family member once the consult was complete), allowing the pet owner to maintain their independence and autonomy, whilst safeguarding animal welfare.

"When you've got vulnerable clients who need support […] it's very difficult to say to a client 'is there someone who could come with you next time?' […] Like you can't, it's impossible, even if you know that that might help both the animal's care and the client's understanding of what you're doing"
– Transcript 24 (vet)

Judgement was raised by both groups of participants as a barrier to effective communication. When a client perceived judgement from the vet, their confidence to raise concerns or ask questions was affected. Furthermore, judgement was reported to affect decision-making, which could affect patient outcomes. Finally, some clients perceived their healthcare seeking as an inconvenience to the vet, particularly in light of time pressures.

"The owners have been so worried, and then they come in and they feel like they can talk to us nurses a little bit more, and maybe ask those silly questions that they're too scared to ask the vets 'cause they don't want to look silly."
– Transcript 17 (veterinary nurse)

5.3.2.3 Process



Process was defined as a series of procedures necessary to the consultation. Process includes numerous aspects of the customer journey, from making the appointment, through to leaving the consultation with a care plan for their pet.

Some clients reported feeling that the customer care team sometimes acted as an access barrier to the vet, and whilst owners were understanding to a point, some clients reported feeling judged by this process when making an appointment for their unwell pet.

"Sometimes it seems to be like […] triaging you or something to say whether you can, like they would at a GP surgery. Like are you worthy? Is it worthwhile you coming? And that sort of thing which is fair enough to a certain extent but they're [the receptionist] not the experts are they really?"
– Transcript 5 (client)

In the waiting room, clients reported preferences for species-separate waiting areas, and good communication regarding current waiting times. Client participants reported that whilst being seen on time was preferable, they were empathetic to the needs of vets and other clients in the case of emergency or complex medical issues. However, there was a fundamental need for continued communication from the customer care team to alleviate the anxiety felt by owners in the waiting room.

"Not walking in and just being sat down and not knowing what's going on. If you walk in on time for your appointment, but then unfortunately

there's a ten-minute wait because we had an emergency, or something like that. I think that's a huge thing for people going in to a practice […] even before you walk into consult, that just puts your mind at rest [if] you know what's going on."
– Transcript 12 (client)

Once in the consult room, clients reported a strong preference for the history to be performed independently of the physical examination. A thorough physical examination was cited by both groups of participants as important, from the client's perspective as a safety net, and from the vet's perspective to demonstrate an understanding for the client's concern. In addition, vets reported that the use of an 'overt' physical examination technique – where the vet verbalises their approach and findings throughout the examination process – assisted with client understanding.

"I'd like my vet to, when I go in, spend the time to listen carefully to everything. What's happened, when did it start, just have the time to actually hear the whole story before making any decision and start doing anything."
– Transcript 12 (client)

Vet participants discussed the difficulties associated with examining anxious or fearful patients but on the whole, felt that these difficulties could be managed with open communication, and a respectful, patient-centred approach.

"Animal amenable to handling but I think on the flip side of that it doesn't matter if they're not, as long as everyone understands why, and you can explain the limitations of what you can and can't do"
– Transcript 1 (vet)

Some participants discussed the process of diagnosis as both unachievable and unnecessary in some contexts and raised the use of diagnosis via treatment as a feasible option in some cases, for example if there were financial constraints. Arriving at a mutually agreed plan was cited as fundamental to a successful consult, something which was particularly emphasised by client participants. Interestingly, many vets spoke in terms of problem resolution as an indicator of a successful consult. In contrast, the majority of clients spoke in terms of progression and leaving with a clear plan for their pet. There was a certain amount of frustration with and hostility towards clients voiced by some veterinary participants, particularly when consultation priorities were mismatched. Notably, there was not the same level of hostility from client participants about the veterinary profession.

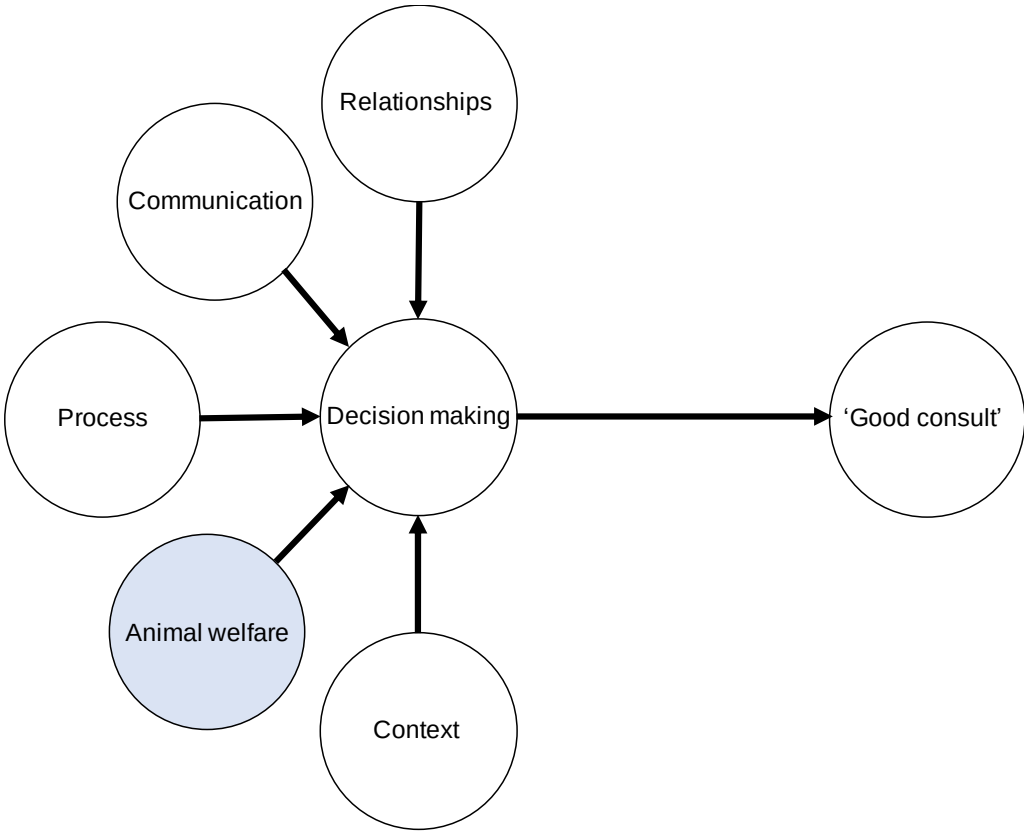
"I just think that at the end of the day they are your babies and I think there just needs to be consistency and a plan and them to tell you the plan. Because obviously they know what they are doing otherwise they wouldn't be in a vet surgery would they? It's just imparting that information; this is what we're going to do. He's going to be on medication for a week, you're going to rest him for a week and then bring him back"
– Transcript 16 (client)

Time was cited as the major barrier to process, with vets reporting the necessity to 'cut corners' during the first stages of the consult. Short

cuts were achieved by truncating the history, combining the history and physical examination, or by prioritising particular communication patterns and minimising those the vets felt were less essential, such as rapport building. Vets also reported using preventative medicine consultations to ‘catch up’ when running behind. However, it is important to note that whilst vets reported feeling hugely time-pressured, the majority of client participants did not report feeling rushed by the vet in their consults.

“if there's lots of people waiting and you feel rushed. If you get one complicated case, then you're behind, you might not give a booster vaccination as much attention as you would if it's not busy.”
– Transcript 8 (vet)

5.3.2.4 Animal welfare



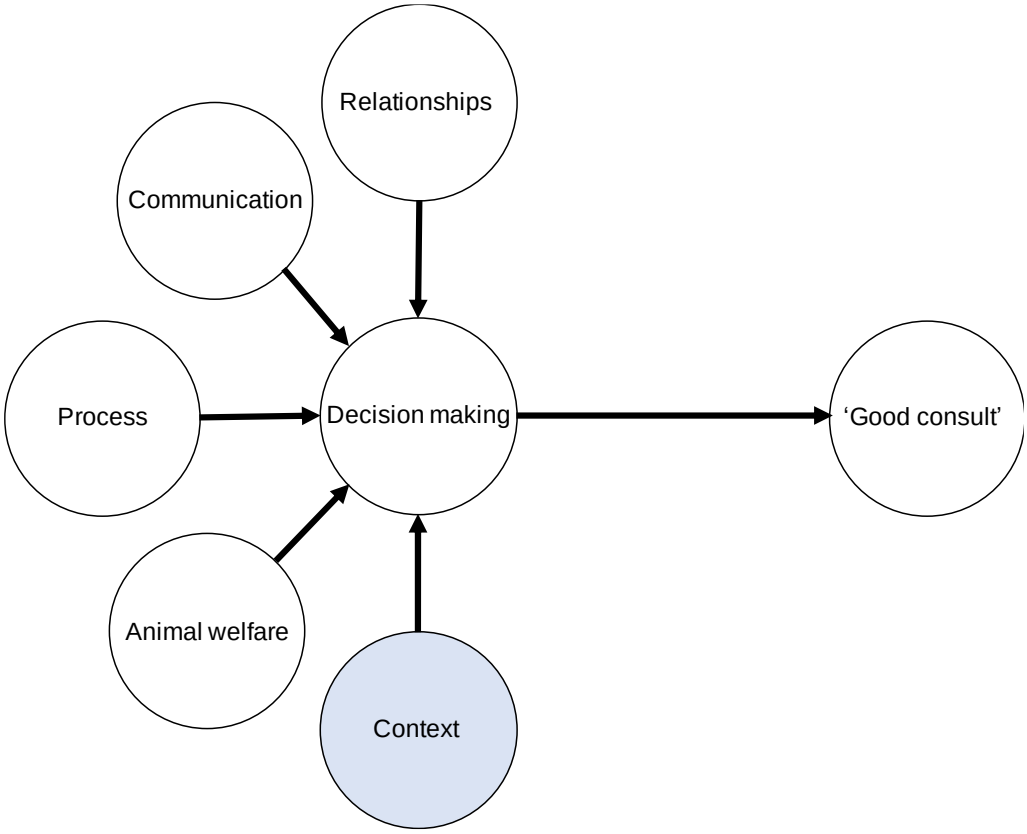
Discussions pertaining to animal welfare were frequent throughout all focus groups, particularly veterinary surgeons. Animal welfare was viewed not only as the focus of the consultation but also as the 'backstop'; the point at which a vet would begin to be more dominant in their communication and decision-making approach. Animal welfare was also considered to be a source of frustration for vets, with perceived adverse welfare contributing to criticism of clients and veterinary surgeon dissatisfaction.

"We really care about the animals and all the stuff that we've said that's bad and bad consultation is because either because we care and we're frustrated because we can't carry out what we want to do, or we can't figure out what's wrong with them, or because we're just constrained by time or whatever or behaviour and stuff and I think that's the core of it isn't it? We really want to do the best for these animals and anything that facilitates that is good and anything that gets in the way of that makes it difficult"
– Transcript 1 (vet)

Interestingly, many vet participants reported the importance of balancing animal welfare with client welfare. Vets discussed employing alternative decisions based upon client factors e.g. electing to euthanase an animal, despite available treatment/management options if a client was unable to cope.

"I said, 'It is okay to consider euthanasia' in both of those cases. Not necessarily because your dogs are currently suffering, but because you are suffering. They were really grateful just to hear it, I think, you can say that that is okay"
– Transcript 8 (vet)

5.3.2.5 Context



Both vets and clients stated the importance of addressing the client's agenda and expectations during the consult, with both groups voicing expectations of competence and civility. Competence from a client perspective was the expectation that the vet was clinically competent, whilst from a veterinary perspective, competence was demonstrated by an engaged and committed client.

“the owner is interested in the animal and the situation, they give you proper information […] I prefer the ‘Oh, this happened, I've seen this’ or involvement of the client in this situation."
– Transcript 17 (vet)

There was also a dual expectation for civility reported by both stakeholder groups.

“Being rude to the client ends up being a bad consult […] sometimes they might perceive that as "this guy's not really listening" or "he's just fobbing off what I'm saying" and it might come across as rude.”
– Transcript 24 (vet)

Finally, vets reported an expectation of personal perfection, an expectation not mirrored by client participants in this study.

“we are all perfectionists, I think. I certainly am, I'm sure we all are really. It's why you do this job isn't it? So, you want everything to be perfect every single time and when it doesn't go that way, you're a bit narked.”
– Transcript 11 (vet)

With regards to consultation agenda, it was found to be a fluid paradigm, highly dependent upon context, rather than fixed. The four contributors to consultation context were ‘Client’, ‘Vet’, ‘Animal’ and ‘Practice’ (Figure 21).

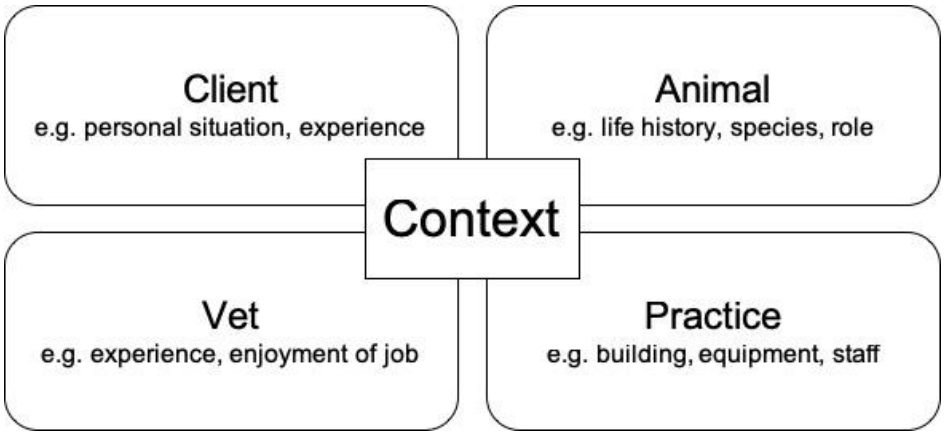


Figure 21: *Illustration of the four consultation contexts*

Within three of the consultation contexts (‘Client’, ‘Animal’ and ‘Vet’), further division into four facets was possible. These facets were ‘Individuality’, ‘Emotional state’, ‘Personal factors’ and ‘Experience’ (Figure 22).

Personality/Individuality
Emotional state
Personal factors
Previous experience

Figure 22: *Contributors to consultation contexts*

Both groups of stakeholders highlighted the significance of individuality impacting on the consultation, particularly upon decision-making and communication; each stakeholder in the consult is an individual.

“It could be a personality thing as well. Where sometimes people, it's not even money brought into it, some people want to go to the nth degree don't they? They want to explore all the... If there's a 1% chance of getting a positive outcome they want to go for that, but other people wouldn't consider what we would say was a natural course of investigation because they don't want to put their dog through and anaesthetic or any time in hospital. And it's that, you've got to gauge that as well from them.”
– Transcript 11 (vet)

Further compounding this was the ‘Emotional state’ of each of the stakeholders; for example, if the client was experiencing difficult emotions, such as anxiety, or the pet was stressed during handling, it impacted upon the consultation.

“Because she's of such a nervous disposition, she gets herself in such a state, I think they, listen and they recognise that she's better if she's in my arms, and she doesn't get as stressed.”
– Transcript 7 (client)

The personal situation of each stakeholder, such as a client’s financial or family situation, the species of the pet, or the vet’s enjoyment of their job also played an important role in defining the context.

“My mother has a brain tumour. She has really bad short-term memory problems, but she wants to be independent. So, she really wants to bring the dog to the vet on her own, but she doesn't remember a thing of what you said." And you go, "Okay. That's absolutely fine, and if you want to do that every time she comes in, I'm absolutely okay." Because once you realise, that's okay. But obviously we don't always realise the stress that the client is under”
– Transcript 8 (vet)

Finally, previous experience of the stakeholder, be that an animal's life history, time since graduation for the vet or the amount of medical knowledge an owner had, contributed to the consult contexts. Interestingly, vets reported a shift in their awareness and communication skills, moving from an inward facing to a more empathic, outward-looking perspective as they became more experienced.

"When I first started, I was very aware of what I was doing. Was I checking everything? Was I doing a good job? Was I explaining everything to the client? And then now, I'm much more thinking of the client. Being out there all the time, listening to them in the waiting room, walking with them in and out, reading their visual cues so I hope I can tell more now if an owner is worried, anxious."
– Transcript 17 (vet)

In addition, many client discussions centred upon their desire to have their level of knowledge and experience acknowledged by the vet. In addition, the 'burden' created by caring for a sick pet was highlighted as an important consideration from the perspective of the client.

"Listening properly to what you're saying and actually appreciating that you might know a bit more about your cat than they do, in my case in anyway"
– Transcript 5 (client)

Finally, the environment in which the consultation takes place was identified as an additional contextual factor with both veterinarians and clients reporting the practice in which a consult takes place to affect the encounter. Poorly designed consult rooms, or consultations taking place

outside of the practice were both cited as having the potential to negatively affect the success of the consultation.

"A very small consult room where you come in, you've got the computer desk on one side then the table and you're standing round the other side of the table with your back against the wall and you're pinioned in and you can't get out the door without passing the dog and all of the available floor space would be filled by a 60kg Rottie. It makes a difference. It gets hot, it gets noisy and it gets tense in there, so I think the buildings do make a difference, definitely"
– Transcript 1 (vet)

Cleanliness, presentation and preparedness of both the environment and the staff was considered essential by many participants, creating an impression of a clinical and professional environment. In situations where this was not the case, clients reported an undermining of their trust in the practice and the vet's clinical ability.

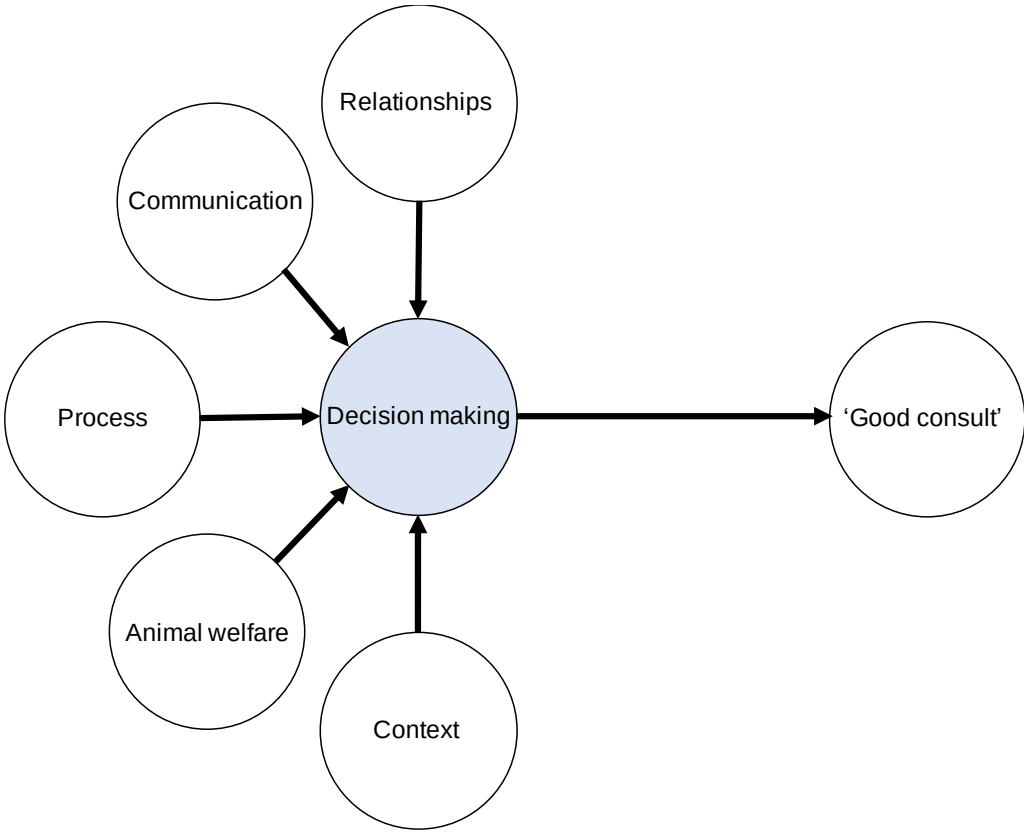
"You want it to look clean and smell clean and feel like you're not going to pick up some nasty bugs or something by taking your animal in there. And sometimes […] it's felt a bit dirty, you know, and I didn't feel too happy about being there."
– Transcript 5 (client)

Finally, client focus group participants described the impact of the wider veterinary team on the consultation itself, with positive interactions with staff outside of the consultation room impacting upon the consult experience.

"And one of the main reasons we come here is the front desk staff. If the front desk staff weren't as enthusiastic about [my dog] as they are,

even the appointment itself could be immaculate, but if you come out here and they're miserable, and they don't want to know and hide behind the counter, I don't think it'd be as easy to come in here"
– Transcript 7 (client)

5.3.2.6 Decision making



As illustrated by the thematic map, the five themes discussed previously all influence consultation decision-making. However, there were additional findings, specific to the decision-making theme, which were not raised elsewhere.

Many clients voiced the difficulties they faced when making decisions about an unwell pet. Decision-making was acknowledged by vets to occupy a large proportion of health problem consultations, but many

respondents reported faster and easier decision-making when there was a pre-existing relationship, attributed to the two-way increase in trust.

If I get lots of options and I've gone there and I'm stressed […] decision making is not always easy for me."
– Transcript 10 (client)

Many clients voiced the desire to be recognised as an expert in their own right, as the ones with the most knowledge about their own animal, and to have their concerns heard and factored into the decision at hand. However, this did not negate the requirement for the vet's opinion with all clients placing great value on the knowledge and experience of the vet. In particular, many clients reported wanting to know what the veterinarian would do in the same circumstance despite not necessarily electing to make the same decision. However, not all vet respondents were comfortable with answering that question.

"You defer to someone, the person who is the expert, you know, you're trusting their opinion. It doesn't necessarily mean I'll take it, but I want to know what they think"
– Transcript 18 (client)

Whilst both vet and client participants discussed the desire to reach the best decision for the animal through a shared decision, the balance of the shared decision did not have to be equal, contrary to the traditional concept of shared decision-making. Both vets and clients also recognised that decision-making was situationally dependent with client

preference for the strength of a vets input into the decision dependent upon individual and situational factors. Vets also recognised that one of the benefits of reaching a joint decision was a reduction in blame from the client if an animal did not improve as expected.

“depends on how ill the animal is. If the animal's really sick, I wouldn't offer a treat-and-see approach. I'll be like, ‘This animal needs to go in and have this done’”
– Transcript 8 (vet)

The use of the internet as an information source was discussed by all stakeholder groups with both groups of stakeholders describing positive and negative aspects of internet use. Clients reported using the internet as an adjunct to veterinary advice, not as a substitute, with many aware of its pitfalls. However, they generally viewed the internet as a useful source of pet health care information. Vets also saw many positives to client internet use for pet health care information, believing that it created a more informed client, understanding that a client’s information-seeking behaviour was driven by a desire to be a proficient pet owner. However, some vets reported frustration at client misdiagnosis through the use of ‘Dr Google’, citing that it had the potential to compromise animal welfare. Many vets discussed the importance of acknowledging that an increasing number of clients will have consulted the internet for healthcare information prior to accessing the consultation, and the importance of being attentive to, rather than dismissive of, the client’s preliminary diagnosis or concerns.

“Increasingly you get clients who have done that bit of prior research. You can't really stop it, even though it may be totally inappropriate. I think it's important to at least acknowledge it, that they've done that.”
– Transcript 4 (vet)

Diagnostic and treatment options were discussed at length by all stakeholders. It was acknowledged by vets that there was often more than one option available to the client. Clients desired a simplified range of options, including euthanasia and benign inaction. However, they also had a strong desire for these options to be informed, allowing them to reach the optimum decision. Both vets and clients spoke of the importance of validating difficult decisions once they had been made, as a way of showing empathy and support to the client.

“That I was doing the right thing, but I knew I was really, but I just needed the vet to tell me that I was doing the right thing.”
– Transcript 15 (client)

Numerous vet participants spoke of the difficulty of balancing what they considered to be the best thing to do for the animal and what would be achievable for the client. Vets spoke clearly in terms of gold standard being the clinically best thing to do. However, many also acknowledged that the “gold standard” treatment or diagnostic option may not actually be the best thing for the individual patient, calling into question the usefulness of the term “gold standard” when presenting options to clients.

"'I'm the vet. I know what's the right thing to do.' Because how can we ever know what's the right thing to do unless we ask the client what they want to do? Yes, we might know what in theory is the right thing to do, but that doesn't mean it's the right thing to do for that animal"
– Transcript 19 (vet)

Finally, many vets discussed the main barriers to reaching a decision; judgement of the client by the vet, and occasionally, prohibitive client finances.

"It needs to be why it is important, the owner has to make that decision. You can't make them feel bad if they don't do it really either. I don't think that's helpful. You have got to make them feel good that they want to do it, not bad if they can't afford it."
– Transcript 14 (vet)

5.3.3 The 'good' consultation: a definition

Through aggregating the findings of this study, it is proposed that the definition of a good consultation is as follows:

A good consultation can be defined as one where there is balance; an appropriate shared-decision is reached through two-way communication, all stakeholders are in agreement regarding the next steps, with the patient's welfare maintained or improved.

The following section discusses these findings and places them in context with the wider research picture.

5.4 Discussion

These results highlight the complexity of the small animal consultation and in this discussion, an argument for a reframing of consultation skills teaching will be made.

Historically, undergraduate teaching has focussed on the communication aspects of the consultation. However, these results demonstrate that whilst optimum communication is a fundamental requirement in order to achieve a ‘good’ consultation, there are additional factors deserving of our attention, all of which feed into the consultation nucleus, decision-making (Figure 19). It is proposed that a greater emphasis on consultation decision-making should be reflected in the undergraduate curriculum, in addition to the important focus on communication skills.

It is also proposed that the traditional view of the ‘triadic’ consultation, widely cited in relation to veterinary consultations (Rötzmeier-Keuper et al., 2018), could be considered an oversimplification; in this study, the relationships present in the small animal consult have been demonstrated to be more complex (Figure 20). Trust was identified as key, with perhaps the most surprising finding being the mismatch between vet and client perceptions of trust in the veterinary profession. The clients participating in this study reported trusting their vets, in line with the findings from Vet Futures, which found that 94% of veterinary clients either generally or completely trusted their vet (Vet Futures

Project Board, 2015c). However, many of the vet participants did not recognise this trust from their own clients. This could be because consumer trust in the UK is low (Edelman, 2018).

However, Edelman (2018) also reported renewed confidence in expert opinion, with decreased trust in information sourced from peers, and low trust in social media. This presents an opportunity to the veterinary profession to redefine the role of the vet in pet health care.

Historically, vets were the sole information source for pet owners with health concerns. This power asymmetry, with the vet as dominant in the stakeholder relationship could be partially responsible for the paternalistic decision-making style, still employed by many vets (Bard et al., 2017; Borden et al., 2010; Shaw et al., 2006). While a small number of clients use their vet as the singular and infallible information source, the vet is no longer the only source of information for a large number of clients, as information is available freely and rapidly on the internet. The rise of the “informed client” has led to a strong client desire to have their expertise recognised with a more equal role in a shared decision.

The informed client arrives for their pet’s consultation with the information that they have acquired and their own opinion on the cause of their pet’s problem. It could be argued that the role of the small animal vet from the client’s perspective is one of facilitation, guidance

and providing a professional opinion based on experience, in order to create a decision and welfare partnership with the client.

However, the contextual and situational nature of decision-making means that a shared decision is not always an equal decision. It can be argued that shared decision-making exists within the spectrum between paternalism and autonomy, rather than an equidistant point at the centre as traditionally conceptualised. This novel conceptualisation, ‘The see-saw of shared decision-making’, postulates that in order to reach the optimal decision for that individual animal and client, there is a requirement for balance and, sometimes, compromise. Figure 23 illustrates the traditional decision-making concepts whilst Figure 24 illustrates the novel conceptualisation of shared decision-making.

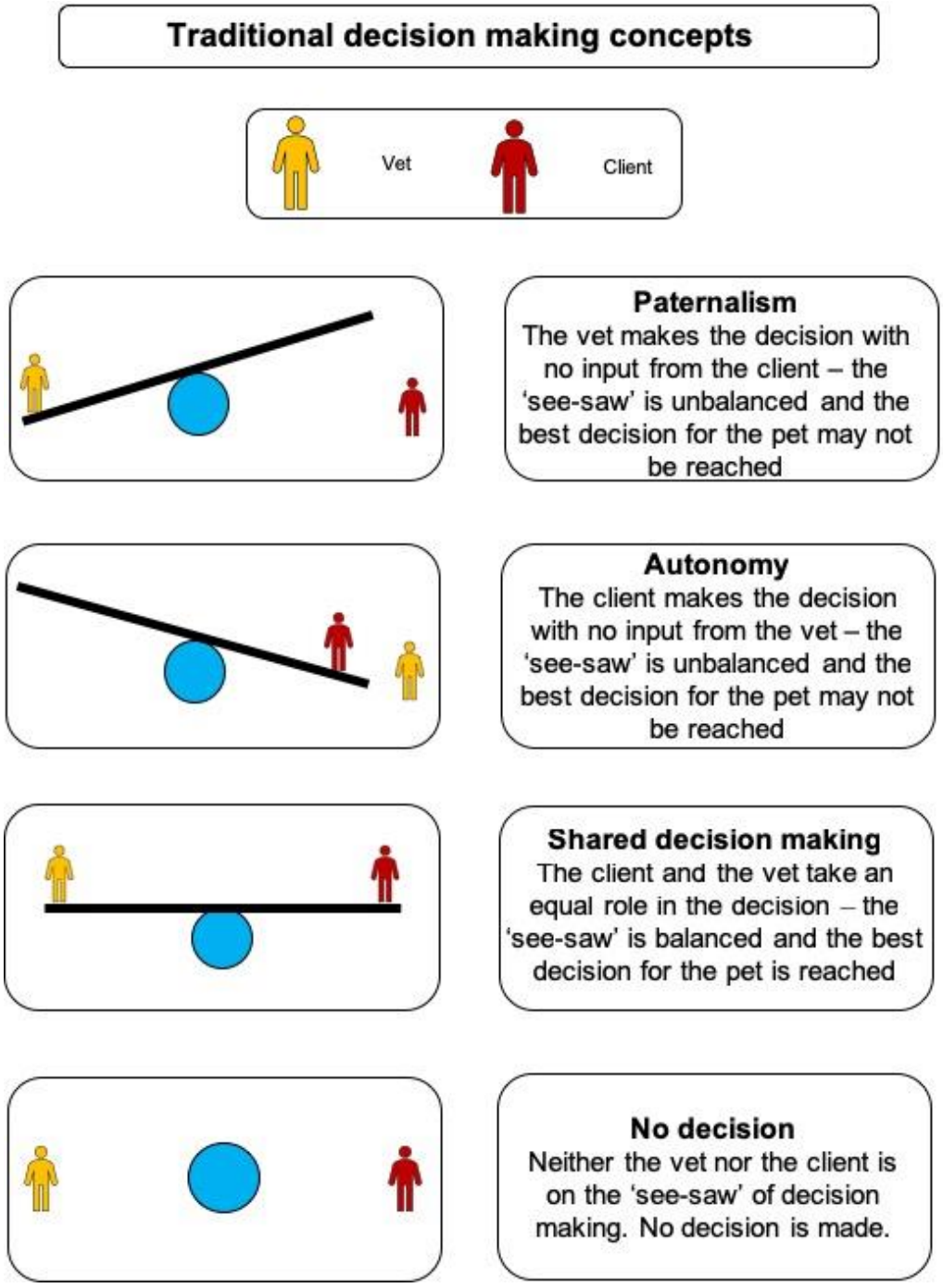


Figure 23: *Traditional decision-making concepts*

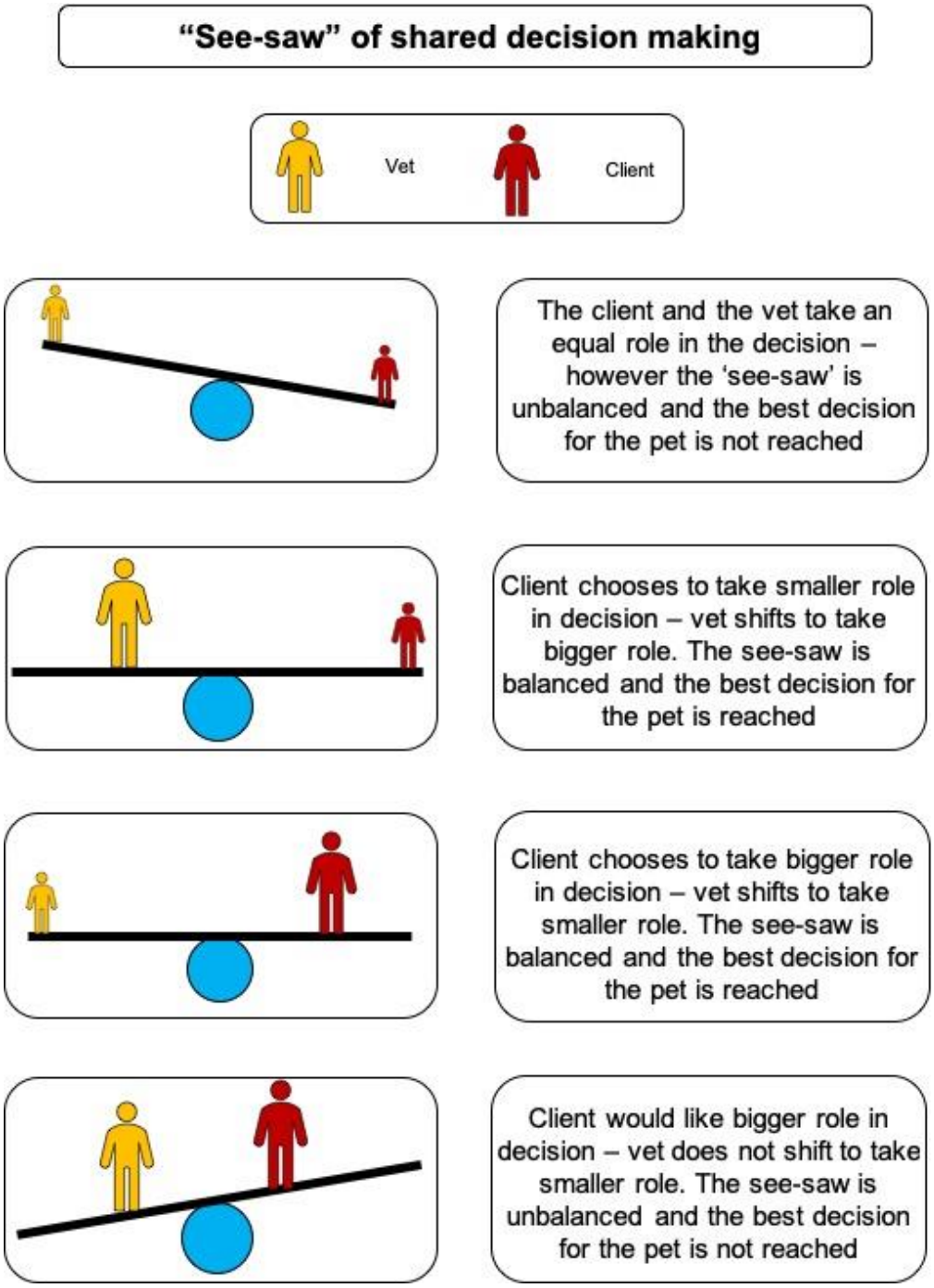


Figure 24: *The "see-saw" of shared decision making*

With regards to vet-client communication, many of the findings of this study reiterate those of Coe et al. (2009, 2008). In particular, the expectations of clients regarding information provision, and the communication challenges encountered by vets including time

constraints, cost discussions and presence of multiple clients in the consultation room. Despite the differing geographies, and the intervening decade, the corroboration of these findings provides some evidence to suggest similarities between these populations allowing the extrapolation of the findings with more confidence. However, there were some additional findings. Worryingly, both vet and client participants raised concerns about judgement, with some clients worrying that they were being judged as to whether they were worthy pet owners. This echoes research conducted on behalf of Legal and General, which found that 24% of dog owners and 20% of cat owners worried that their vet would judge them (Legal & General, 2019). Whilst the rigor of this research cannot be assessed, when used in conjunction with the findings from this study, a disquieting point of reflection is raised; client concerns about judgement from the vet could lead to a delay in presenting their pet for treatment and could undermine trust in the profession as a whole. However, what remains unclear is what can be done to rectify this.

Time was consistently cited as a barrier to the good consultation, affecting communication at all stages of the consultation and decision-making style, meaning that vets felt pressured to take short cuts in order to keep to time. Furthermore, consultation length is a much-discussed topic within the UK veterinary profession, with a growing call for longer veterinary consultations (Belshaw et al., 2018c; Everitt et al., 2013; Robinson et al., 2014). The average scheduled veterinary

consultation in the UK in 2005 was 10 minutes (Gray and Cripps, 2005). Furthermore, it has been reported that approximately half of veterinary consultations in the UK exceed their allocated time (Everitt et al., 2013; Robinson et al., 2014). With cost discussions (Coe et al., 2009), multiple presenting problems (Robinson et al., 2014), and co-morbidities (Belshaw et al., 2018c) all contributing to time pressure within a consultation. However, there is currently no up-to-date published data regarding the average allocated appointment length in the UK, although a recent unpublished survey, undertaken to address this knowledge gap, found the average scheduled small animal consultation has now increased to 15 minutes (Corah et al., unpublished data).

While a certain length of consult is required to enable appropriate levels of care, it may be that a client's perception of the time allocated is of greater significance. Indeed, Grave and Tanem, (1999) found that medication adherence was correlated to the client's perception of a vet having spent sufficient time with them during the consultation, and Ogden et al (2004), describing medical consults with a general practitioner, reported a correlation between patient satisfaction and the patient perceiving that they had sufficient time in the consult.

Whilst the majority of client participants in the study did not report feeling rushed for time in the consultation, the veterinary participants did; this must be born in mind. Whilst shared decision-making is now

considered the ‘gold-standard’ in human medicine, due to its correlation with improved patient outcomes (Stewart, 1984), and is desired by veterinary clients (Coe et al., 2008; Show and Englar, 2018), the perceived lack of time in consultations may create a barrier to its implementation.

Much can be learned from the contrasting consult narrative of the vet and the client; with many vets prioritising resolution and diagnosis as the route to a good consult, whilst the majority of clients desired a mutually agreed plan. The reasons behind this are unclear and likely complex. It could be because clients assume an unspoken level of competence in a vet’s diagnostic ability. Or that whilst clients want a diagnosis, they are pragmatic with an acceptance of uncertainty and a rational expectation of the consultation and of the vet.

With regards to the vets, this ‘diagnosis-focused' identity has also been described by Armitage-Chan and May (2018), linking it to lower emotional wellbeing and frustration with the challenges of veterinary practice. Student role-modelling of academic clinicians during patient rounds (Apker and Eggly, 2004) is thought to contribute to the creation of this diagnosis-focused identity, with Roder et al. (2012) reporting an increased desire for professional autonomy and dominance with increasing clinical experience.

The creation of a diagnosis-focused professional identity during undergraduate studies certainly highlights the importance of implementing a more holistic, relationship-centred care approach, with better integration of personal and professional skills within clinical teaching. Furthermore, the desire for professional autonomy and dominance displayed by some members of the veterinary profession could mean that achieving a change from a diagnosis- to a challenge-focussed profession may take a significant amount of time. However, an acknowledgement of the situation is the first step in facilitating change.

In addition, a greater appreciation of the individual contexts within the consultation, identified by this study, could help encourage a change in mind-set. Utilising the client context as an example, Figure 25 illustrates the context of a fictional client, ‘Mrs Smith’ and her dog, ‘Alfie’. The metaphor of the iceberg has been chosen because using a diagnosis-focussed approach; it is very easy to view the consultation as an animal with a particular presenting problem. However, looking below the waterline, it becomes clear that context is key to understanding ‘Mrs Smith’s’ concerns and expectations, and facilitating the optimum outcome for ‘Alfie’.

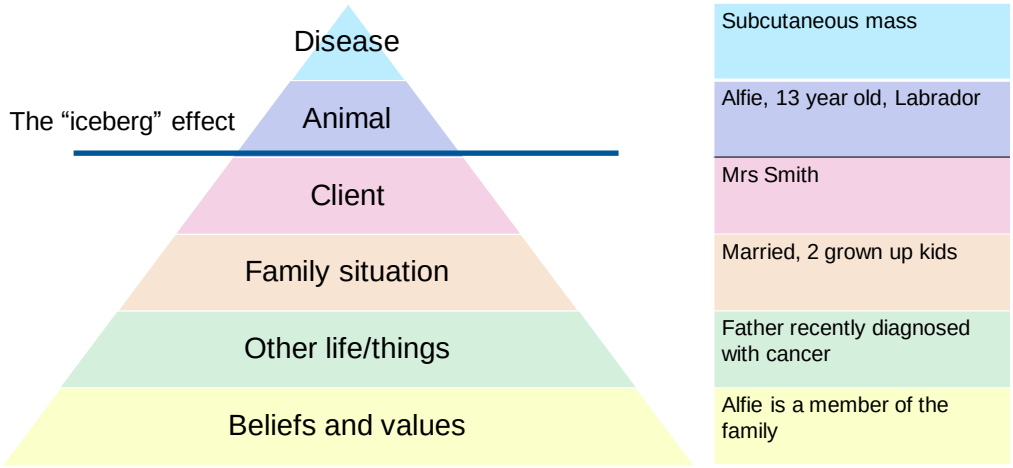


Figure 25: *The context ‘Iceberg’*

To return to the question posed in the introduction, regarding the overlap between a ‘good vet’ and a ‘good consultation’, this study has shown that whilst the vet plays a fundamental role in the consultation, and therefore their ‘calibre’ is important, there are many other factors which contribute to a successful consultation.

5.4.1 Limitations

Despite the purposive sampling frame, ensuring that a variety of vets and pet owners were recruited for the focus groups, this study is not without its limitations. Participants were self-selecting and the very nature of conducting focus groups meant that all discussions were susceptible to recall bias. However, the findings show good concordance with previous published research, both in the UK and further afield, which suggests that the results could be extrapolated beyond only the participating individuals.

Notably, the clinical specifics of the consultation did not feature significantly in the focus group discussions. This could be, in part, due to the phrasing of the questions posed to the participants – questions were kept purposefully broad, to minimise biasing the responses; different questions may have elicited different answers. However, their absence from the discussions could be due to other reasons, with possible explanations including clinical specifics being given lesser significance by the participants (both vet and clients) or that optimal clinical reasoning was assumed. Further research examining the reasons for the absence is warranted. Nevertheless, it should be acknowledged that the definition of a 'good' consultation should be interpreted alongside the complexities of the clinical presentation, and how this may affect both the decision-making and the achieved patient outcome.

Decision-making complexity is difficult to objectively describe and measure due to stakeholder contextual factors; a value-judgement should not be placed upon the complexity of a decision, as decision-making is individual and sometimes irrational (Loewenstein et al., 2001). Furthermore, an argument can be made that there is a disconnect between consultation interactions and clinical outcomes; a patient may not get better, despite an optimal consultation, and conversely a poor consultation could still result in clinical resolution.

To this end, it is argued that the proposed definition of a ‘good’ consultation, despite the exclusion of clinical outcomes, remains valid. As discussed in the narrative literature review, the clinical reasoning process is only one aspect of consultation decision-making and the aim of this thesis is to propose an alternative perspective to the traditional biomedical narrative. However, as the focus of this study was on small animal health problem consultations, further work is required to explore how the features of the ‘good consult’ could vary with different clinical contexts.

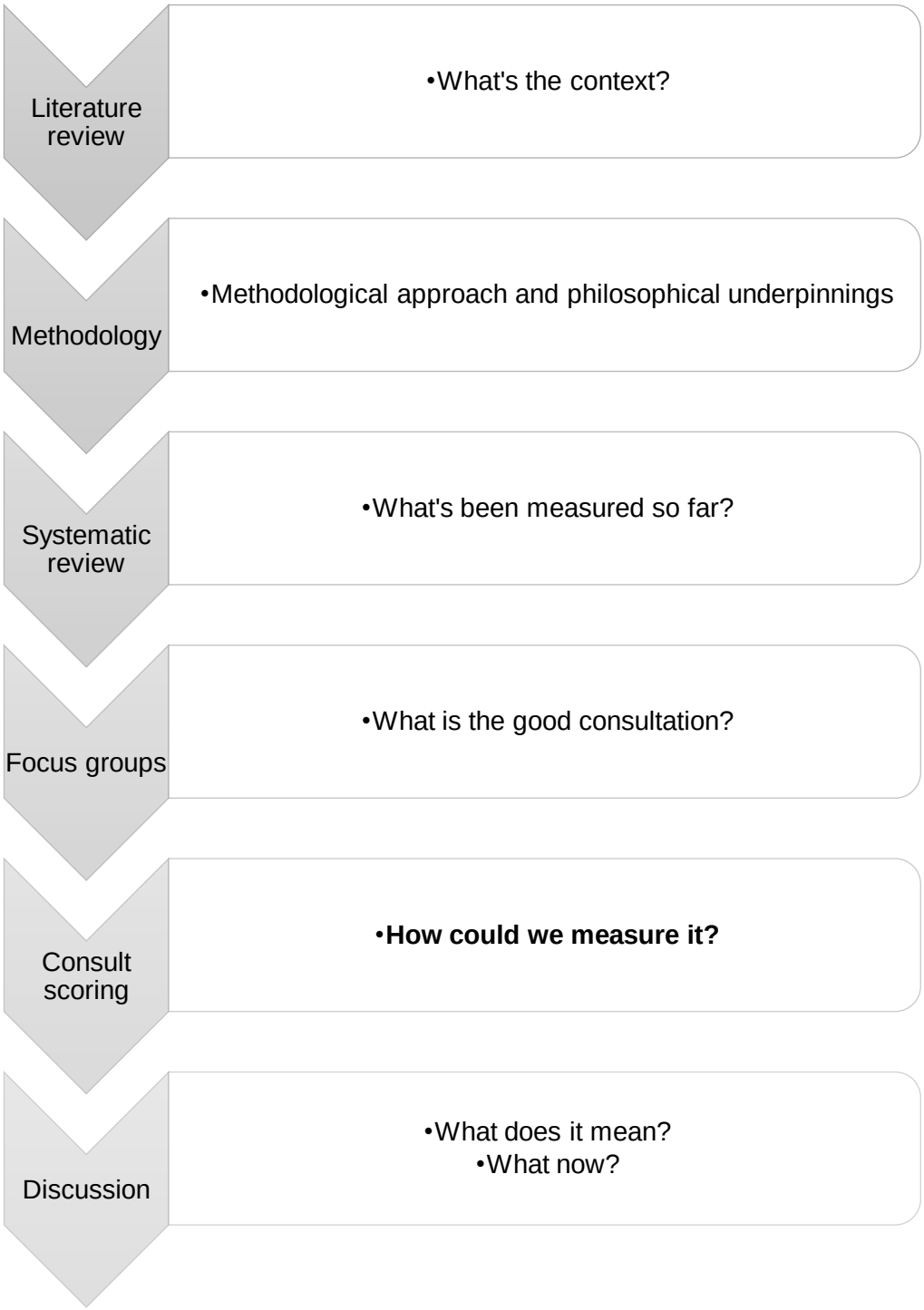
5.5 Conclusion

This chapter has proposed the definition of a ‘good’ consultation, identified through stakeholder focus groups. This study has also established the importance of decision-making in the consultation, which is influenced by complex relationships, communication, logistical processes, stakeholder contexts and animal welfare. These findings suggest that a reframing of consultation skills teaching is required, with a greater emphasis on reaching a shared decision. However, what is unclear is whether utilising shared decision-making correlates with consultation outcomes such as those identified by the systematic review; satisfaction and adherence.

The next chapter aims to examine recorded small animal, specific health problem consultations, perform an assessment of the decision-making and communication practices and a comparison of these with

measurements of consultation success. In this chapter, the second thesis question will be answered; ‘how could we measure the ‘good’ consultation?’

6 Measuring the specific health problem consultation: observing real-world consults



6.1 Introduction

Chapter 4 (Measuring the success of specific health problem consultations in cats and dogs: a systematic review) identified constructs of small animal consultations which had been previously measured, whilst Chapter 5 (What happens in a good consultation? Stakeholder observations and experiences) presented consult stakeholder opinions regarding factors that were considered important to consultation success. In this chapter, the second thesis question, "how could we measure the 'good' consultation?' is answered through assimilation of the prior thesis findings and identification of relevant instruments.

The following subsection explores potential consultation assessment tools and provides the argument for their inclusion or exclusion from this study.

6.1.1 Consultation assessment tools

Thematic analysis of focus groups (Chapter 5) identified six themes as important to consultation success. The themes were 'Relationships', 'Communication', 'Process', 'Animal welfare', 'Context' and 'Decision-making'.

Both communication and decision-making have been extensively researched in the medical literature, and numerous published and validated measurement tools exist (e.g. Roter Interaction Analysis

System (Roter et al., 1997), the Global Consultation Rating Scale (Burt et al., 2014) and the OPTION tools (Elwyn et al., 2013). However, very few instruments have been validated for the vet-client interaction. The only communication assessment tool specifically validated for veterinary use is RIAS (Shaw et al., 2004b), although additional descriptive measures have been described including discourse analysis (McDermott, 2018), conversation analysis (MacMartin et al., 2015) and thematic analysis (Bard et al., 2017). There are no veterinary-validated measures of decision-making.

An in-depth discussion of RIAS, including its strengths and weaknesses, has been presented in the narrative literature review (Chapter 2). Perhaps its greatest weakness is one of logistics; data must be sent to a specialist team for analysis, something beyond the practicalities of general practice. To this end, despite RIAS being the most frequently used tool, it was elected to attempt to validate alternative, pre-existing communication tools.

An assessment of ‘process’, through the measurement of consultation time metrics (e.g. consult length and client waiting time) was deemed achievable within this study. However, some aspects of process such as the presence of species-specific waiting areas or the communication around waiting times were deemed outside of the scope of this thesis.

There is a fundamental expectation from all consultation stakeholders that animal welfare considerations should be at the forefront of the consultation. Animal welfare is a complex paradigm with numerous frameworks for evaluation including the ‘Five freedoms’ (Farm Animal Welfare Council, 2009) and various quality of life scales (Webster et al., 2016). However, the objective measurement of this multifaceted construct in the context of the specific health problem consult is, again, beyond the scope of this thesis. To this end, it was elected not to objectively measure animal welfare in this study, despite its importance.

The measurement of the remaining contributory factors to a good consult (relationships and context) were judged challenging to assess objectively, due difficulty in defining these wide-reaching concepts.

A tool purporting to measure the strength of a vet-client-patient relationship has been developed by Adams (2003). However, whilst this tool has a good internal consistency and an assessment of face and construct validity had been made, there were concerns regarding non-responder bias due to a low response rate. In addition, the scale dimensions of interaction, bond recognition, satisfaction and communication provide significant overlap with other constructs being measured for this study and so an alternative measurement was sought.

It can be argued that trust is a proxy measure for relationships, as trust is foundational within its construct. Veterinary-validated tools quantifying trust have been developed and, to this end, it was elected to evaluate trust in the vet as the relationship-proxy in this thesis.

6.1.2 Triangulation

In order to meaningfully assess the application of these proposed measures, triangulation with accepted outcome measures is fundamental to building the validity argument for their use. Whilst there are limited veterinary-specific, validated tools for consultation outcome assessment, a problem identified in the systematic review (Chapter 4), instruments to measure adherence and the satisfaction of vet and client have been reported. It was elected to use these outcome measures to examine the relationship between in-consult assessments and consultation outcomes.

6.1.3 Aims

The aim of this study is to utilise the findings from the thesis up to this point, in combination with the literature presented in the narrative review, to measure recorded consultations. The primary objective was to describe the relationship between the communication and decision making within the consultation, and post-consultation measurements of success. A secondary objective was to validate new measures of consult assessment for use in a general-practice setting.

6.2 Methods

Reporting of this study follows the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement guidelines (von Elm et al., 2007).

6.2.1 Tool selection

Decisions regarding the most appropriate tools to facilitate the aims of this study were made following a discussion between the researcher and her supervisors. The overarching aim was to produce something which was both applicable to, and achievable in, first opinion small animal practice.

The following subsections examine the instruments selected for the study which are split into pre-consultation, in-consultation and post-consultation measurements. Figure 26 provides a basic visual representation with the aim of reducing ambiguity.

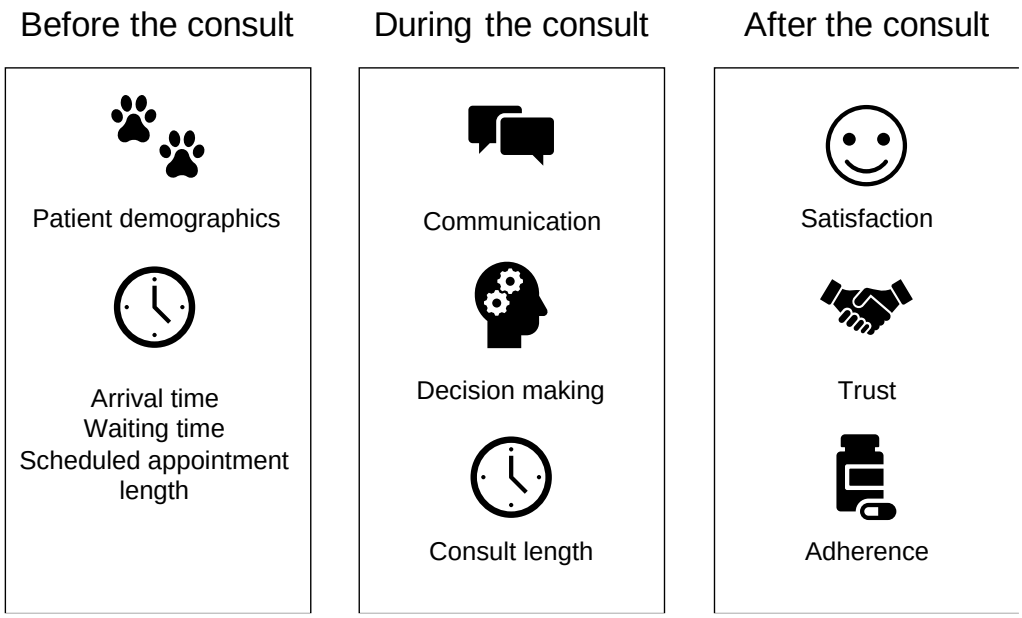


Figure 26: *A visual representation of the consultation measurements performed during this study*

6.2.1.1 Pre-consultation tools

Sections of a pre-existing data collection tool, designed by Robinson *et al.* (2015), were used to gather consultation characteristics. Information collected comprised patient signalment (species, age, sex/neuter status). In addition, a simple data collection tool was designed by the researcher to gather information on appointment time, time of client arrival, time client was called into the consultation, allocated appointment length and actual consult length. Consultation length was defined as the time the door was opened to call the client into the consult room, until the door close at the end of the consultation. In addition to the measurable time metrics, two additional constructs were calculated:

- Schedule efficiency: [time taken into consultation] - [scheduled appointment time]
- Waiting time: [time taken into consultation] – [arrival time]

The complete pre-consultation data collection tool is available in Appendix 9.

6.2.1.2 In-consultation tools

The type of physical examination performed, diagnosis category and consultation outcome were assessed using the recorded consultations, using definitions described by Robinson (2014) (Table 17).

Table 17: Definitions for demographic data collection tool (Robinson, 2014)

		Definition
Type of clinical examination	Full	"A structured examination of the animal as a whole, involving the examination of several different body systems. To be classed as a full clinical exam it must include the following: Assessment of the overall condition of the animal including assessment of the skin and coat; Auscultation of the thoracic cavity; Palpation of the abdominal cavity; Brief visual examination of the eyes, ears, mouth (including mucous membranes). It may include the following: Assessment of the lymph nodes; Assessment of peripheral pulses; Assessment of the skin/coat
	Focussed	"A clinical examination where one or several body systems are examined separately, however all four criteria for a full examination are not met"
Type of diagnosis	Definitive	"A situation where the diagnostic work-up is considered complete, and sufficient to diagnose the condition with a high level of confidence"
	Working	"A diagnosis based on experience, clinical epidemiology and early confirmatory evidence provided by ancillary studies e.g. radiographic findings"
	Presumed	"A diagnosis based upon minimal evidence or clinical suspicion, upon which therapy or other

		non-diagnostic interventions may or may not be based including symptomatic treatment”
	Open	“A situation where no single differential diagnosis stands out as being significantly more likely, i.e. multiple differentials are equally likely at the conclusion of the consult”
	Previous	“A situation where a particular condition discussed during a consult has been diagnosed during an earlier consultation or set of investigations”
Outcome	Therapeutic treatment	“Administration or application of a remedy in an attempt to alleviate and/or cure a clinical sign, disease or injury”
	Prophylactic treatment	“Administration or application of a remedy to a patient in an attempt to prevent disease and/or injury”
	Management	“Any change in husbandry and/or animal care advised by the vet which may assist in reducing severity and/or frequency of a condition”
	Work up	“Any diagnostic test or further investigation excluding history-taking and routine clinical examination, for which the results are not available by the end of the consultation and which will help to identify the underlying cause of the presenting complaint”
	Other	“Any outcome which does not fit into another category, including where time is being taken to consider the options after the consultation, prior to making a decision”
	Nothing	“Any problem where no action is taken, other than basic monitoring by the owner”

As there were no validated instruments for assessing the level of shared decision-making within the veterinary consultation, a medically validated instrument was selected; OPTION5 (Elwyn et al., 2013). Minor modifications to the scale were made by substituting ‘vet’ for ‘doctor’ and ‘client’ for ‘patient’, the modified instrument is presented in Table 18. For each consultation, scale items were given a score between zero and four (Table 19). Subsequently, scores were totalled, and rescaled to give a percentage shared decision-making score.

Table 18: Modified OPTION5 tool

1: For the health issue being discussed, the vet draws attention to or confirms that alternate treatment or management options exist or that the need for a decision exists. If the client rather than the vet draws attention to the availability of options, the vet responds by agreeing that the options need deliberation. 2: The vet reassures the client or re-affirms that the vet will support the client to become informed or deliberate about the options. If the client states that they have sought or obtained information prior to the encounter, the vet supports such a deliberation process. 3: The vet gives information or checks understanding about the options that are considered reasonable (this can include taking no action), to support the client in comparing alternatives. If the client requests clarification, the vet supports the process. 4: The vet makes an effort to elicit the client's preferences in response to the options that have been described. If the client declares their preference(s), the vet is supportive. 5: The vet makes an effort to integrate the client's elicited preferences as decisions are made. If the client indicates how best to integrate their preferences as decisions are made, the vet makes an effort to do so.

Scored on a four point scale (0= no effort, 1= minimal effort, 2= moderate effort, 3= skilled effort and 4= exemplary effort)

Table 19: Score descriptors for OPTION5 tool (Elwyn et al., 2013)

Score	**Description**
0 = No effort	Zero effort observed.
1 = Minimal effort	Effort to communicate could be implied or interpreted.
2 =Moderate effort	Basic phrases or sentences used.
3 = Skilled effort	Substantive phrases or sentences used.
4 = Exemplary effort	Clear, accurate communication methods used.

Two pre-existing communication evaluation tools were utilised in this study; "7 steps consult scoring" (7Steps), a tool developed and used by Onswitch Ltd[10] to assess veterinary consultations, and the Global Consultation Rating Scale (GCRS), a tool validated for medical consultations (Burt et al., 2014).

[10] 7 Steps consult scoring was developed by Onswitch Ltd, Grantham as a communication assessment tool. It was developed from the Calgary-Cambridge consultation guide as a commercial tool but had not undergone validity and reliability assessments prior to this study

GCRS comprises 12 domains with each domain scored on a three-point scale (0= not done/ poor, 1= adequate, 2= good) and overall scores summed to give a total out of 24. Guidance for the use of the GCRS was given within the text of the scale and permission to modify the tool for the veterinary context was granted by the authors. Once again, modifications were minimal and involved changing the word ‘doctor’ to ‘vet’ and ‘patient’ to ‘client’ and/or ‘animal’ as appropriate. Table 20 outlines the scoring domains and guidance for the tool.

Table 20: Modified Global Consultation Rating Scale

Domain	**Guidance**
Initiating the session	Greets client and animal
	Introduces self and nature of interview
	Demonstrates interest and respect, attends to client and animal’s physical comfort
	Uses appropriate opening question
Gathering information: problem identification	Listens attentively, minimising interruption and leaving space for client
	Encourages client to tell the story of the problem(s) from when first started to the present
	Checks and screens for further problems and negotiates agenda
Gathering information: problem exploration	Uses open and closed questions, appropriately moving from open to closed
	Facilitates client’s responses verbally and non-verbally e.g. silence, repetition, paraphrasing
	Picks up and responds to verbal and non-verbal cues (body language, speech, facial expression)
	Clarifies statements which are vague or need amplification
	Periodically summarises & invites client to correct interpretation or provide further information
	Uses clear, easily understood language, avoids jargon
Gathering information: client’s perspective	Actively determines client’s perspective (ideas, concerns, expectations, feelings, effects on life)
	Appropriately and sensitively responds to and further explores client’s perspective

Building the relationship: non-verbal communication	Demonstrates appropriate non-verbal behaviour e.g. eye contact, posture, position, movement, facial
Building the relationship: developing rapport	Acknowledges client's views and feelings; is not judgemental
	Uses empathy to communicate appreciation of the client's or animal's feelings or predicament
	Provides support: expresses concern, understanding, willingness to help
Providing structure	Progresses from one section to another using signposting; includes rationale for next section
	Structures interview in logical sequence, attends to timing, keeps consult on task
Providing correct amount and type of information	Chunks and checks, using client's response to guide next steps
	Assesses the client's starting point (good if carefully tailors explanation)
	Discovers what other information would help client, seeks and addresses client's info needs
Aiding accurate recall and understanding	Organises explanation (good if uses signposting/summarising)
	Check's client's understanding (good if asks client to restate information given)
	Uses clear language, avoids jargon and confusing language
Achieving a shared understanding: incorporating the client's perspective	Relates explanations to client's illness framework
	Encourages client to contribute reactions, feelings and own ideas (good if responds well)
	Picks up and responds to client's non-verbal and covert verbal cues
Planning: shared decision making	Explores management options with client
	Involves client in decision making (good if establishes level of involvement client wishes)
	Appropriately negotiates mutually acceptable action plan
Closure	Contracts with client re next steps
	Safety nets
	Summarises session briefly and clarifies plan of care
	Final check that client agrees and is comfortable with plan

3-point scale (0= not done/poor, 1= adequate, 2= good)

7Steps comprises nine domains and is scored using "yes", "no" and "not-applicable". No guidance was provided as to the scoring criteria, therefore comprehensive definitions were produced by the researcher.

These definitions were assessed on a pilot group of 10 recorded consultations, and clarifications made prior to commencing the full study. Traditionally, the developers of the tool scored all domains with yes as one and no as zero. However, it was felt that there was a need for consistency of application of the tool across all consults in this study. For example, it may not have been appropriate to discuss nutrition or preventative medicine in every consult. Furthermore, some of the attributes had no evidence-base for their inclusion in the scale for example the use of the word “recommend”. To this end, the tool was modified to include positive, negative and neutral attributions through discussion between the researcher and her supervisors using the available evidence base. Neutral attributions were given to those items with no published evidence base. Individual scores were totalled and a “percentage 7Steps” calculated. Table 21 details 7Steps domains, items, attributes and definitions.

Table 21: Modified 7steps consultation-scoring tool

Domain		**Items**	**Attribute: positive, negative or neutral**	**Possible answers and definitions**		
				Yes	No	N/A
STEP 1: Preparation of the clinician and of the room	i.	Wearing visible name badge?	Positive	Name is visible on badge or embroidered on top	No name visible	-
	ii.	Dressed appropriately or in uniform?	Positive	Vet is dressed appropriately or in uniform	Vet is dressed inappropriately	-
	iii.	Observed to check notes/patient info?	Positive	Vet seen to check notes before calling client in	Vet not seen to check notes before calling client in	Unable to tell if vet has checked notes or not (depends when camera switched on)
	iv.	The visible surfaces and shelving tidy?	Positive	Consult room surfaces are tidy	Consult room surfaces are untidy	-
	v.	The consulting table clean?	Positive	Consult table appears clean	Consult table is not clean	-
STEP 2a: Creating rapport – at the greeting or initial phase	i.	Goes to the client to greet?	Positive	Vet opens door and either goes to client or waits at door in open and friendly posture	Vet calls clients and returns to room without client	-
	ii.	Uses the pet's name?	Positive	Vet uses the pet's name during consult opening	Vet does not use the pets name during consult opening	-
	iii.	Uses the owner's name	Positive	Vet uses the client's name during consult opening	Vet does not use the client's name during consult opening	-
	iv.	Offers their own name?	Positive	Vet tells client their name	Vet does not tell client their name	Vet alludes to the fact they know the client

						well/have seen them before
	v.	Connects with the pet?	Neutral	Vet makes some effort to interact with pet e.g. direct talk, pat on head	Vet makes no effort to interact with pet	-
	vi.	Makes eye contact with the client?	Positive	Vet makes eye contact with client	Vet does not make eye contact with client	-
STEP 2b: Maintaining rapport during the consult	i.	Talks sufficiently to the pet?	Positive	Vet directs verbal communication towards the pet e.g. “good boy” or “just going to listen to your heart”	Vet directs minimal verbal communication towards the pet	-
	ii.	Uses the pet’s name during the consultation?	Positive	Vet uses the pet’s name during course of consult	Vet does not use the pets name during course of consult	-
	iii.	Talks sufficiently to the owner?	Positive	Vet subjectively spends enough time talking to the client throughout consult	Vet does not spend enough time talking to the client throughout consult	-
	iv.	Makes good eye contact with the owner?	Positive	Vet makes a subjectively normal amount of eye contact with client	Vet does not make frequent enough eye contact with client	-
	v.	Shows active listening skills?	Positive	Vet uses active listening techniques e.g. “uhuh”	Vet does not use active listening skills	-
STEP 3: Gathering information	i.	Uses open question(s) initially?	Positive	Vet opens history taking with an open question(s)	Vet does not begin with an open question(s)	-
	ii.	Allows the client to complete their answer(s)	Positive	Vet does not interrupt client while they are answering questions	Vet interrupts client before they have finished answering the question	-

	iii.	Enquires about the client's priority or mindset?	Positive	Vet asks for client's ideas/expectations/concerns	Vet does not ask the client about their ideas/expectations/concerns	-
	iv.	Clarifies or sets an agenda?	Positive	Clarifies the presenting complaint with the owner or sets an agenda for the consult	Does not clarify the presenting complaint or set an agenda	-
	v.	Separates initial questions from commencing the exam?	Positive	Initial history taken separately from the physical exam. (further questions during physical exam ok)	History and physical exam conducted at the same time	-
	vi.	Discusses other pets in the household?	Neutral	Asks about or mentions other pets	Doesn't ask about or mention other pets	-
STEP 4: An obvious pet examination	i.	Performs an appropriate step-by-step examination?	Positive	Performs a subjectively appropriate, logically structured physical examination	Does not perform a suitable physical exam (or exam performed is unstructured)	-
	ii.	Articulates the steps involved while examining?	Positive	Talks the client through the physical exam whilst performing it	Doesn't discuss the steps of the physical exam	Explains physical examination retrospectively
	iii.	Or explains those steps retrospectively?	Positive	Explains the physical exam steps after completion of the physical exam	Doesn't explain the physical exam steps after completion	Talks the client through the physical exam whilst performing it
	iv.	Invites the owner to see/hear/smell/touch?	Neutral	Invites the owner to see/hear/smell/touch? e.g. tartar on teeth	Doesn't ask the owner if they would like to see/hear/smell/touch?	-

	v.	Uses technology to demonstrate findings?	Positive Merged with 5.vi.	Uses technology e.g. computer/video/model to clarify findings	Doesn't use another method to clarify findings	-
STEP 5: Recommending a course of action (incorporating diagnosis when applicable)	i.	Explain the findings?	Positive	Explains what has been found on the physical exam	Doesn't explain what has been found on the physical exam	-
	ii.	If choices given, informs these choices?	Neutral	If client given options, vet explains pros/cons of choices	Client given options but no explanation	Client not given options
	iii.	Clearly advises a specific course of action	Positive	Clearly advises client what to do	Does not advise a specific course of action/action unclear	-
	iv.	Uses the word 'recommend'?	Neutral	Uses the word 'recommend' with respect to decision making/options	Doesn't use the word recommend in respect to decision making	-
	v.	Supports any recommendation with a clear explanation?	Positive	Clearly explains why they are recommending that option	Does not explain why a particular option is recommended	Didn't make any recommendations/advise a specific course of action
	vi.	Uses any visuals to aid understanding?	Positive Merged with 4.v.	Uses visual aids e.g. white board/video/model to clarify findings	Doesn't use visual aids	-
STEP 6: Check and signpost the diagnostic or treatment plan	i.	Checks that the owner's needs have been met?	Positive	Asks the client if there is anything else they need	Doesn't ask the client if there is anything else	-
	ii.	Checks that the owner can comply with the treatment plan?	Positive	Asks the client if they are able to tablet their cat/had the medication before/can do 3 times a day	Doesn't ask if the client is able to comply with the treatment plan	No treatment plan is made during the consult

	iii.	Uses open questions during these steps?	Positive	Uses open questions when asking the client if their needs have been met and if they can comply with the diagnostic or treatment plan	Uses closed questions when asking the client if their needs have been met and if they can comply with the diagnostic or treatment plan	-
	iv.	Gives or makes plans to give an estimate?	Positive	Discusses cost, gives the client an estimate or commits to drawing up an estimate during the consult	Does not discuss costs during the consult	-
	v.	Demonstrates or offers to demonstrate treatment administration?	Positive	Demonstrates or offers to demonstrate treatment administration	Does not demonstrate or offer to demonstrate treatment administration	No treatment is prescribed during the consult
	vi.	Clarifies, reiterates or commits to writing the treatment plan?	Positive	Clarifies or reiterates the diagnostic or treatment plan or commits to writing it down	Does not clarify or reiterate the diagnostic or treatment plan or commit to writing it down	-
STEP 7: The final stage	i.	Reiterates the next action or appointment	Positive	Reiterates the next action or appointment	Does not reiterate the next action or appointment	-
	ii.	Books the next appointment themselves?	Neutral	Books the next appointment in the consult	Doesn't book the next appointment in the consult	Another appointment is not required
	iii.	Or directs the client specifically as to when or what the next appointment?	Neutral	Directs the client specifically as to when to book the next appointment?	Doesn't specifically direct the client as to when to book the next appointment	Books the next appointment in the consult

	iv.	Says goodbye to the owner?	Positive	Says goodbye to the client	Doesn't say goodbye to the client	Unable to assess as vet escorts client out of the room to reception
	v.	Says a form of goodbye to the pet?	Positive	Says goodbye/strokes/etc to the pet	Doesn't say goodbye to the pet	-
	vi.	Escorts the owner out of the room?	Positive	Walks out of the consult room with the client at the end of the consult	Does not escort the client out of the room at the end of the consult	-
Additional information	a.	Does the clinician leave the room during the consultation?	Neutral	The vet leaves the room during the consult	The vet doesn't leave the room during the consult	-
	b.	Is a nurse appointment offered (e.g. for admission/weight/dental care/pain management)?	Neutral	A nurse appointment is offered	A nurse appointment is not offered	-
	c.	Is preventative healthcare recommended?	Neutral	Preventative healthcare is recommended during the consult e.g. flea/worm treatment	Preventative healthcare is not recommended during the consult	-
	d.	Are nutritional recommendations made?	Neutral	A recommendation about diet is made in the consult	A nutritional recommendation is not made during the consult	-
	e.	Are notes on computer made in the client's presence?	Neutral	Notes are made on the computer while the client is in the consult room	Notes are not made on the computer while the client is in the consult room	-
	f.	If so, is this explained or made in an inclusive fashion?	Positive	Notes are made in an inclusive fashion/note making is explained to the client	Notes are made but it is not explained or carried out in an inclusive fashion	Notes are not made on the computer while the

						client is in the consult room
	g.	Or does it hinder the "feel" of the consultation?	Negative	Notes are made in the client's presence in a way that is disruptive to the consult	Notes are made in the client's presence in a way that is not disruptive to the consult	Notes are not made on the computer while the client is in the consult room
	h.	Any terms used that might be hard to understand?	Negative	The vet uses lots of scientific language during the consult	The vet uses lay terms as well as/instead of scientific terms during the consult	-

Items scored "Yes", "no" and "not applicable". Neutral items were not scored, and negative items were reverse scored

6.2.1.3 Post-consultation tools

Tools identified in the systematic review to measure vet satisfaction (VSQ)(Shaw et al., 2012a) (Table 22) and client satisfaction (CSQ)(Coe et al., 2010) (Table 23) were selected as two of the outcome measures of this study for reasons that they were veterinary-specific and had undergone validity and reliability appraisal. Minor modifications were made to the CSQ to reflect a UK as opposed to North American audience; the word 'veterinarian' was changed to vet. The VSQ remained unchanged.

Table 22: Veterinarian Satisfaction Questionnaire (Shaw et al., 2012a)

1. This was a very satisfying visit for me
2. I got all the detail I needed regarding the patient's history
3. This client constantly complains
4. This client is very personable
5. I would have liked to spend more time with this client
6. I didn't get all the detail I wanted on the patient's problem and signs
7. I established effective rapport with this client
8. My time was NOT well spent in the visit
9. This client trusts me a great deal
10. I was NOT effective in influencing this client's behaviour
11. I felt adequately trained and confident in treating this patient
12. I don't think this visit was necessary
13. This client understood my explanations of the medical problem and treatment
14. This patient is pleasant to work with
15. This visit was boring and unchallenging
16. I didn't conduct as detailed a physical exam as I would like
17. There are aspects of my relationship to this client that I would like to change
18. I could NOT understand all that this client wanted to tell me
19. This client demands a lot of personal attention
20. I spent more time with this client than I would have liked

5-point Likert scale (1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree)

Table 23: Modified client satisfaction questionnaire

1. The amount of attention the vet gave your pet
2. How well the vet understood the reason for your visit
3. Your sense of the vet's confidence interacting with you and your pet
4. How well the vet involved you in the entire appointment
5. The vet's examination of your pet

6. How well the vet explained treatments and procedures
7. How well you understood the costs today
8. How well the vet involved you in decisions
9. The vet's discussion of options with you
10. The vet's discussion of the cost with you
11. The interest the vet expressed in your opinion
12. The amount of information you received from the vet
13. How well the vet addressed all of your concerns
14. The vet's recognition of the role this pet has in your life
15. The amount of time the vet spent with you and your pet

6-point, positively-skewed Likert scale (1= poor, 2= fair, 3= good, 4= very good, 5= excellent, 6= could not be better)

In addition to the published measures of satisfaction, it was elected to include a visual analogue satisfaction scale consisting of 'smiley faces', similar to those now in regular use to assess satisfaction in other service industries (e.g. https://www.happy-or-not.com). To the author's knowledge, the use of this type of tool has not yet been published in the veterinary literature. To this end, a 5-point 'smiley face' scale was created (Figure 27) and accompanied by the question "How would you rate your satisfaction with the consultation today? (Please circle the smiley face which best matches your experience)".



Figure 27: *Smiley face scale to measure satisfaction in the consultation*

The VSQ, CSQ, smiley face scales, and two trust instruments were presented to a mix of clinical and non-clinical members of staff at the School of Veterinary Medicine and Science, University of Nottingham

for feedback. The trust instruments presented were the measure of ethos/credibility proposed by McCroskey & Teven (1999), utilised in the veterinary context by Weijs *et al.* (2019), and the Veterinarian Trust scale (VTS) proposed by Grand *et al.* (2013). The VTS (Table 24) was unanimously favoured due to it's simplicity and ease of use and so was selected for use in this study. The instrument underwent minor modifications with incidences of the term "veterinary student" changed to "vet" and "interview" changed to "consult" or "consultation".

Table 24: Modified veterinarian trust scale

1. The vet put me at ease during the consultation
2. The vet behaved in a professional manner
3. The vet did not talk down to me or above my head
4. The vet was kind and accommodating towards me, but firm when required
5. The vet was honest with me if they did not know the answer to a question, or were uncertain about their knowledge
6. I believe that the vet would readily seek the advice of others if they had doubts about their diagnosis or recommendations for treatment
7. The vet demonstrated their knowledge about my animal's condition by describing the diagnosis completely and precisely
8. I trust this vet
9. Based on this consult, I would see this vet again for my animal's care
10. I trusted that the vet had carefully considered my and their concerns regarding my animal
11. I would recommend this vet to others for their veterinary needs

5-point Likert scale (1= strongly disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5= strongly agree)

A free text box, accompanied by the question "Is there anything else that you would like to share with us about your experience during the consult today?" was provided to give respondents the opportunity to give any additional feedback, not covered by the scales.

Elements of the questionnaire published by Adams *et al.* (2005) (Table 25) were used to assess medication adherence. Modifications to the

tool were made via and iterative discussion between the researcher and her supervisors to ensure that all questions were relevant to the research questions of the thesis whilst minimising the question load on the participants. Clients were to be contacted four to eight days after the consultation to complete the adherence questionnaire. The questions were designed to allow the calculation of a percentage adherence by asking when the client started giving the medication and how much medication remained. This allowed a comparison to be made with the drug label information recorded at the time of the consultation.

Table 25: Modified medication compliance tool

Question	**Response**
What is the name of the medication that was prescribed for your pet?	Free text
What was the reason that your pet was prescribed the medication?	Free text
When did you start giving the medication?	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, I have not given the medication
What time of day did you start giving the medication?	Morning, Evening, Lunchtime
How much medication do you have left? (e.g. number of tablets, amount of liquid left in bottle)	Free text
I feel like the vet spent enough time in the consult room with me	5-point Likert scale (1= strongly disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5= strongly agree)
Were you shown how to give the medication to your pet?	Yes, No, I don't remember
If YES, who showed you how to give the medication?	Vet, Vet nurse, Receptionist, Vet Student, Other (please specify)
Did the vet discuss your home and work situation in relation to the treatment schedule for your pet?	Yes, No, I don't remember
Medicating my pet was a stressful experience for myself, our household or my pet.	5-point Likert scale (1= strongly disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5= strongly agree)
Did you have any trouble giving the prescribed medication to your pet?	Yes, No

I was satisfied with the veterinary services provided to myself and my pet during this episode of illness	5-point Likert scale (1= strongly disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5= strongly agree)

Due to the complex nature of the consultation, multiple tools have been selected to measure individual constructs. To this end, Table 26 provides a summary map, identifying which constructs are being measured in this study and the instruments employed to achieve this.

Table 26: Summary construct-instrument map

Chapter	Construct	Measurement instrument	Notes
Systematic review	Client satisfaction	Client Satisfaction Questionnaire (Coe et al., 2010)	Minor modifications made to scale
	Vet satisfaction	Veterinarian Satisfaction Questionnaire (Shaw et al., 2012a)	No modifications made to scale
	Adherence	Adherence questionnaire (Adams et al., 2005)	Elements of published questionnaire used with minor modifications
Focus groups	Relationships	Veterinarian Trust Scale (Grand et al., 2013)	Trust as proxy for relationships, minor modifications made to scale
	Communication	Global Consultation Rating Scale (Burt et al., 2014) 7Steps Consult scoring (Unpublished, Onswitch Ltd)	Minor modifications made to both scales
	Process	Time metrics	Author developed and defined for this thesis
	Decision-making	OPTION5 (Elwyn et al., 2013)	Minor modifications made to scale
	Animal welfare	Not measured	-
	Context	Not measured	-

6.2.2 Pilot

Two practices were recruited through researcher networks to assess study feasibility. Consent for study participation and consultation recording was gained from both veterinary surgeon and client prior to the beginning of the consultation. The information sheets and consent forms provided to the participants are available in appendix 12 and 13.

For each consultation, descriptive data were collected throughout the consultation process using practice records, client reports and consult observation and recorded on the previously described paper-based tool (Appendix 9).

GoPro action cameras (HERO 2014, GoPro, San Mateo, California, USA) protected by a plastic case were used to record the consultations. Two cameras were placed unobtrusively, at height, in the consulting rooms to ensure all consult participants could be observed (Figure 28). Cameras were switched on prior to the start of each participating consultation by the researcher. Cameras were switched off at the end of the consultation once the client had left the room.



Figure 28: *Example action camera placement in consulting room*

Paper-based post-consultation surveys of client satisfaction and client trust in the vet (Appendix 10) and vet satisfaction (Appendix 11) were performed following the conclusion of the visit. Vet post-consultation satisfaction questionnaires were provided to the vet at the start of the day to allow familiarisation with the questions, attempting to minimise the disruption caused. If a patient was prescribed medication, consent to contact the client by telephone or email was gained and a survey to gather information on adherence was administered between four- and eight-days post consult. Figure 29 illustrates the data collection process.

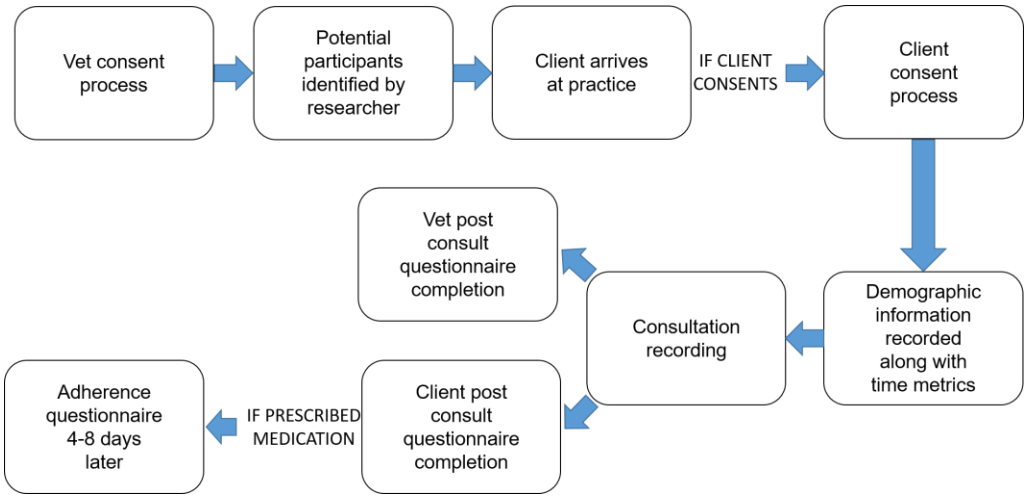


Figure 29: *Flowchart illustrating the data collection process*

At the end of each day of data collection, video files were downloaded onto a secure research drive for later analysis of the communication and decision-making processes.

Nine consultations were recorded, and no changes to the measurement tools or study methods were required. To this end, it was decided that the study was feasible and so recruitment for the full study was commenced.

6.2.3 Study participants

A convenience sample of thirteen small animal veterinary surgeons, working across six veterinary practices in the UK, were recruited via social media and researcher social networks to participate in this cross-sectional study. All participating vets were an employee of their practice; no locum vets took part in this study. As the study was

intended to be preliminary in nature, a sample size calculation was not performed.

Clients attending the practice of the participating veterinary surgeons for the first time for a specific health problem appointment were invited to participate in the study by the researcher. Recording at each practice continued until five consultations were recorded for each participating veterinary surgeon. Data collection was performed between April and August 2018.

6.2.3.1 Ethical considerations

This study was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2013). To this end, the research protocol was submitted to the Research Ethics Committee at the School of Veterinary Medicine and Science, University of Nottingham. Written informed consent was gained from all participants prior to the beginning of the consultation. Participant privacy and confidentiality were maintained by anonymising recordings and questionnaires through the allocation of a unique identification number. All data were stored securely in accordance with University of Nottingham research policy. In addition, consent forms were stored securely and separate to all data.

A discussion was had with all participants regarding the procedure for withdrawal of consent during a consultation. This was to provide reassurance that should a consultation become more emotive in nature,

e.g. a decision was made to euthanase a pet, filming would be ceased immediately through removal of the cameras from the consult room. Participants were also reminded that they could withdraw consent at any point before, during or after data collection up until research publication.

Finally, all participants were given contact details of the researcher, her supervisors and the school, should they wish to seek clarification following the consultation recording process. They were also given the option to receive a copy of a research findings summary once research was complete.

6.2.4 Data analysis

6.2.4.1 Quantitative data

Data was tabulated in Microsoft Excel[11] and all data was cleaned and coded by a single researcher (LC). Basic descriptive statistics (mean, median, mode, and interquartile range) were calculated at the vet and practice level. All statistical analyses were performed using SPSS[12]. Statistical significance was set as $p \leq 0.05$.

An assessment of data normality was performed using Shapiro-Wilk test, chosen as it is more sensitive than Kolmogorov-Smirnov, particularly for small sample sizes (Ghasemi and Zahediasl, 2012).

[11] Microsoft Excel for Mac, Version 16.25
[12] IBM Corp. Released 2016. IBM SPSS Statistics for Mac, Version 24.0. Armonk, NY: IBM Corp.

Spearman Rank Correlation coefficients and Mann-Whitney U tests were used as appropriate to investigate associations.

6.2.4.2 Reliability testing

Two raters (LC and one of her supervisors, KC) used the in-consultation measurement instruments on a random sample of six recorded consults (10%) to calculate inter-rater reliability. A second random sample of six consults were scored twice by the same rater (LC) to assess intra-rater reliability. The assessments were made using Lin's Concordance Correlation Coefficient (CCC) (Lin, 1989). Lin's CCC was selected as it is the most appropriate assessment of non-parametric, continuous data (Liu et al., 2016). As there is currently no literature citing a scale for the degree of agreement of Lin's CCC, the results were interpreted as follows:

- 0.21–0.40 Fair
- 0.41–0.60 Moderate
- 0.61–0.80 Substantial
- 0.81–1.00 Excellent

The internal consistency of the tools was assessed using Cronbach's alpha, with a value in excess of 0.70 considered good.

6.2.4.3 Qualitative data

Thematic analysis (Braun and Clarke, 2006) was performed by a single author (LC) on the verbatim free text responses, with themes generated inductively.

6.3 Results

6.3.1 Descriptive results

Dogs were the most commonly presented patients with an average age across all species of 6.4 years. The majority of patients presented were neutered (72.3%, n=47). A full physical exam was performed for the majority of consultations (69.2%, n=45) and a definitive diagnosis was reached in only 12.3% of the consults (n=8). The majority of clients left the consultation with a therapeutic treatment for their pet (63.1%, n=41), regardless of diagnostic category. Table 27 presents the demographic characteristics in more detail.

Table 27: Descriptive characteristics of consultations

Species	**Canine**		**Feline**		**Rabbit**
	78.5% (n=51)		20% (n=13)		1.5% (n=1)
Age (years)	**Mean**	**Median**	**Mode**	**Range**	**Quartiles**
	6.4	6.0	4.0	0.1 - 17.3	Q1: 2.1 Q3: 10.0 IQR: 7.9
Sex/neuter status	**Female Entire**	**Female Neutered**	**Male Entire**		**Male Neutered**
	15.4% (n=10)	29.2% (n=19)	12.3% (n=8)		43.1% (n=28)
Physical examination performed	**Full examination**		**Focussed examination**		**No examination**
	69.2% (n=45)		24.6% (n=16)		6.2% (n=4)
Diagnosis category	**Open**	**Presumed**	**Working**	**Definitive**	**Not applicable**
	46.2% (n=30)	33.8% (n=22)	6.2% (n=4)	12.3% (n=8)	1.5% (n=1)
Consultation outcome	**Work up**	**Therapeutic treatment**	**Manage**	**Nothing**	**Other**
	21.5% (n=14)	63.1% (n=41)	7.7% (n=5)	6.2% (n=4)	1.5% (n=1)

The appointment length allocation for the majority of consultations recorded for this study was 15 minutes (92.3%, n=60) whilst the mean duration of consultations recorded for this study was 16 minutes and 39

seconds. On average, clients were called into the consult 6.39 minutes after the allocated appointment time, and clients waited an average of 11.1 minutes to be seen from their time of arrival into the practice. Table 28 presents the consultation timing characteristics in more detail.

Table 28: Consultation timing characteristics

	Mean	Median	Mode	Max	Min	Quartiles	Missing values
Allocated appointment length (minutes)	-	-	15	30	15	-	0
Consult length (minutes and seconds)	16:39	15:19	14:10	37:57	4:11	Q1:10:56 Q3:19:54 IQR: 8:58	0
Schedule efficiency (minutes)	6.39	6	1	32	-15	Q1:1 Q3:10 IQR:9	3
Waiting time (minutes)	11.1	9	6	31	2	Q1:6 Q3:16 IQR:10	4

Individual scores on all three in-consult measuring tools were highly variable. The median 7steps score was 76.32% (Range: 44.74 - 96.15, IQR: 14.93), median GCRS was 79.17% (Range: 16.67 – 100.00, IQR: 20.84) and median OPTION5 score was 60% (Range: 0 – 100, IQR: 70). Table 29, Table 30 and Table 31 present the results for each tool in more detail by vet and by practice.

Table 29: Summary statistics for 7Steps tool (represented as a percentage)

Practice	Vet	Mean	Median	Min	Max	1st quartile	3rd quartile	IQR
A	1	72.88	75.00	62.16	81.82	67.65	77.78	10.13
	2	83.81	82.35	73.33	96.15	80.56	86.67	6.11
	3	64.36	60.00	59.46	78.79	59.46	64.10	4.64
		78.35	**79.17**	**62.16**	**96.15**	**73.75**	**82.22**	**8.47**
B	4	79.26	80.65	71.79	85.71	76.32	81.82	5.50
	5	81.50	79.49	77.14	91.43	78.38	81.08	2.70
		80.38	**80.07**	**71.79**	**91.43**	**77.45**	**81.63**	**4.18**
C	6	67.38	68.57	60.00	76.47	60.00	71.88	11.88
	7	83.97	88.57	65.71	89.19	87.50	88.89	1.39
		75.68	**74.17**	**60.00**	**89.19**	**66.43**	**88.30**	**21.88**
D	8	59.92	57.14	44.74	78.79	51.35	67.57	16.22
		59.92	**57.14**	**44.74**	**78.79**	**51.35**	**67.57**	**16.22**
E	9	76.29	81.25	62.16	92.00	62.16	83.87	21.71
	10	77.61	76.32	66.67	91.18	75.76	78.13	2.37
	11	75.62	77.14	71.05	78.79	73.68	77.42	3.74
		76.50	**77.14**	**62.16**	**92.00**	**72.37**	**80.02**	**7.65**
F	12	61.16	61.11	45.95	77.14	59.46	62.16	2.70
	13	70.27	68.57	66.67	77.42	67.65	71.05	3.41
		65.72	**67.16**	**45.95**	**77.42**	**61.37**	**70.43**	**9.06**
Overall		**73.39**	**76.32**	**44.74**	**96.15**	**65.71**	**80.65**	**14.93**

Table 30: Summary statistics for Global Consultation Rating Scale (represented as a percentage)

Practice	Vet	Mean	Median	Min	Max	1st quartile	3rd quartile	IQR
A	1	75.00	79.17	37.50	95.83	75.00	87.50	12.50
	2	75.00	79.17	58.33	91.67	66.67	79.17	12.50
	3	64.17	62.50	50.00	83.33	62.50	62.50	0.00
		75.00	**79.17**	**37.50**	**95.83**	**68.75**	**85.42**	**16.67**
B	4	90.00	91.67	79.17	100.00	83.33	95.83	12.50
	5	95.00	100.00	79.17	100.00	95.83	100.00	4.17
		92.50	**95.83**	**79.17**	**100.00**	**85.42**	**100.00**	**14.59**
C	6	76.67	79.17	70.83	83.33	70.83	79.17	8.34
	7	88.33	91.67	75.00	100.00	79.17	95.83	16.66
		82.50	**79.17**	**70.83**	**100.00**	**76.04**	**89.59**	**13.54**
D	8	53.33	58.33	16.67	83.33	33.33	75.00	41.67
		53.33	**58.33**	**16.67**	**83.33**	**33.33**	**75.00**	**41.67**
E	9	88.33	87.50	83.33	91.67	87.50	91.67	4.17
	10	89.16	87.50	83.33	95.83	83.33	95.83	12.50
	11	85.00	87.50	70.83	95.83	79.17	91.67	12.50
		87.50	**87.50**	**70.83**	**95.83**	**83.33**	**91.67**	**8.34**
F	12	51.67	45.83	37.50	83.33	41.67	50.00	8.33
	13	72.50	70.83	58.33	95.83	58.33	79.17	20.84
		62.08	**58.33**	**37.50**	**95.83**	**46.87**	**77.09**	**30.21**
Overall		**77.24**	**79.17**	**16.67**	**100.00**	**70.83**	**91.67**	**20.84**

Table 31: Summary statistics for OPTION5 tool (represented as a percentage)

Practice	Vet	Mean	Median	Min	Max	1st quartile	3rd quartile	IQR
A	1	42.00	55.00	10.00	70.00	10.00	65.00	55.00
	2	39.00	30.00	10.00	80.00	25.00	50.00	25.00
	3	43.00	30.00	10.00	100.00	10.00	65.00	55.00
		40.50	**40.00**	**10.00**	**80.00**	**13.75**	**62.50**	**48.75**
B	4	59.00	75.00	0.00	100.00	40.00	80.00	40.00
	5	35.00	15.00	0.00	85.00	5.00	70.00	65.00
		47.00	**55.00**	**0.00**	**100.00**	**7.50**	**78.75**	**71.25**
C	6	66.00	75.00	0.00	100.00	60.00	95.00	35.00
	7	29.00	15.00	10.00	80.00	15.00	25.00	10.00
		47.50	**42.50**	**0.00**	**100.00**	**15.00**	**78.75**	**63.75**
D	8	65.00	60.00	55.00	80.00	55.00	75.00	20.00
		65.00	**60.00**	**55.00**	**80.00**	**55.00**	**75.00**	**20.00**
E	9	38.00	35.00	0.00	85.00	0.00	70.00	70.00
	10	35.00	10.00	0.00	95.00	5.00	65.00	60.00
	11	81.00	80.00	75.00	90.00	75.00	85.00	10.00
		51.33	**70.00**	**0.00**	**95.00**	**7.50**	**82.50**	**75.00**
F	12	79.00	80.00	70.00	90.00	75.00	80.00	5.00
	13	46.00	55.00	5.00	90.00	5.00	75.00	70.00
		62.50	**75.00**	**5.00**	**90.00**	**58.75**	**80.00**	**21.25**
Overall		**50.54**	**60.00**	**0.00**	**100.00**	**10.00**	**80.00**	**70.00**

Average client satisfaction was high for both the CSQ (median: 5.32, range 2.85-6, IQR: 0.95) (Table 32) and the client smiley face scale (median: 5, range: 4-5, IRQ: 0) (Table 34). Table 33 provides summary statistics for the CSQ by question.

Average vet satisfaction was lower than client satisfaction for both the VSQ (median: 4.1, range: 3.15-4.65, IQR: 0.45) (Table 35) and the vet smiley face scale (median: 4, range: 3-5, IQR: 1) (Table 37). Table 36 provides summary statistics for the VSQ by question.

Finally, trust in the vet was high (median: 5, range: 3.36-5, IQR: 0.27) (Table 38). Table 39 provides summary statistics for the veterinarian trust scale by question.

Table 32: Summary statistics for the client satisfaction questionnaire

Practice	Vet	Mean	Median	Min	Max	1st quartile	3rd quartile	IQR
A	1	5.4	5.71	4.27	6	5	6	1
	2	5.17	5	4.86	5.53	5	5.47	0.47
	3	4.66	5.15	2.85	6	3.67	5.64	1.98
		5.08	**5.15**	**2.85**	**6**	**4.93**	**5.68**	**0.75**
B	4	5.57	5.87	5	6	5	6	1
	5	5.62	5.67	5.13	6	5.43	5.85	0.42
		5.59	**5.8**	**5**	**6**	**5.13**	**6**	**0.87**
C	6	5.2	4.93	4.54	5.85	4.93	5.73	0.8
	7	5.59	5.93	4.67	6	5.36	6	0.64
		5.39	**5.55**	**4.54**	**6**	**4.93**	**5.91**	**0.97**
D	8	4.94	4.93	4	5.87	4.86	5.07	0.21
		4.94	**4.93**	**4**	**5.87**	**4.86**	**5.07**	**0.21**
E	9	5.56	5.73	5	6	5.07	6	0.93
	10	5.62	6	5	6	5.09	6	0.91
	11	5.19	5.29	4.36	5.93	4.87	5.5	0.63
		5.46	**5.5**	**4.36**	**6**	**5.03**	**6**	**0.97**
F	12	5.24	5.53	4	6	5	5.64	0.64
	13	5.15	5	4.87	6	4.9	5	0.1
		5.19	**5**	**4**	**6**	**4.93**	**5.62**	**0.69**
OVERALL		**5.3**	**5.32**	**2.85**	**6**	**4.98**	**5.93**	**0.95**

Individual questions scored on a 6-point adjectival response format: (1) Poor, (2) Fair, (3) Good, (4) Very Good, (5) Excellent, and (6) Could not be better. Scores totalled and divided by number of questions answered. Values calculated by vet and then by practice

Table 33: Summary statistics for the client satisfaction questionnaire by question

Question	Mean	Median	Mode	Min	Max	1st quartile	3rd quartile	IQR	Unable to assess	Missing values	% client responding 'could not be better'
The amount of attention the vet gave your pet	5.5	6	6	4	6	5	6	1	0	1	52.3
How well the vet understood the reason for your visit	5.41	5	6	4	6	5	6	1	0	1	46.2
Your sense of the vet's confidence interacting with you and your pet	5.47	6	6	4	6	5	6	1	0	1	52.3
How well the vet involved you in the entire appointment	5.53	6	6	4	6	5	6	1	0	1	58.5
The vet's examination of your pet	5.44	6	6	3	6	5	6	1	0	2	52.3
How well the vet explained treatments and procedures	5.44	6	6	3	6	5	6	1	1	1	52.3
How well you understood the costs today	4.82	5	5	1	6	4	6	2	7	1	26.1
How well the vet involved you in decisions	5.29	5	5	2	6	5	6	1	2	1	41.5
The vet's discussion of options with you	5.42	6	6	3	6	5	6	1	4	1	47.7
The vet's discussion of the cost with you	4.60	5	6	1	6	4	6	2	20	3	20.0
The interest the vet expressed in your opinion	5.23	5	6	3	6	5	6	1	4	1	41.5

The amount of information you received from the vet	5.29	5	6	3	6	5	6	1	0	2	46.2
How well the vet addressed all of your concerns	5.32	5	6	3	6	5	6	1	0	2	47.7
The vet's recognition of the role this pet has in your life	5.15	5	5	2	6	5	6	1	4	1	35.4
The amount of time the vet spent with you and your pet	5.42	6	6	2	6	5	6	1	0	1	53.8

Items scored using a 6-point adjectival response format: (1) Poor, (2) Fair, (3) Good, (4) Very Good, (5) Excellent, and (6) Could not be better.
Not applicable or no discussion = unable to assess, No response = missing value

Table 34: Summary statistics for the client smiley face scale

Practice	Vet	Mean	Median	Mode	Min	Max	1st quartile	3rd quartile	IQR	Missing values
A	1	5	5	5	5	5	5	5	0	0
	2	5	5	5	5	5	5	5	0	0
	3	4.2	4	5	3	5	4	5	1	0
		4.73	**5**	**5**	**3**	**5**	**5**	**5**	**0**	**0**
B	4	5	5	5	5	5	5	5	0	0
	5	5	5	5	5	5	5	5	0	1
		5	**5**	**5**	**5**	**5**	**5**	**5**	**0**	**0**
C	6	5	5	5	5	5	5	5	0	0
	7	4.8	5	5	4	5	5	5	0	0
		4.9	**5**	**5**	**4**	**5**	**5**	**5**	**0**	**0**
D	8	4.8	5	5	4	5	5	5	0	0
		4.8	**5**	**5**	**4**	**5**	**5**	**5**	**0**	**0**
E	9	4.8	5	5	4	5	5	5	0	0
	10	5	5	5	5	5	5	5	0	0
	11	4.8	5	5	4	5	5	5	0	0
		4.87	**5**	**5**	**4**	**5**	**5**	**5**	**0**	**0**
F	12	4.8	5	5	4	5	5	5	0	0
	13	4.6	5	5	4	5	4	5	1	0
		4.7	**5**	**5**	**4**	**5**	**4.25**	**5**	**0.75**	**0**
OVERALL		**4.83**	**5**	**5**	**4**	**5**	**5**	**5**	**0**	**1**

Scored using a 5-point visual analogue scale: (1) Very dissatisfied, (2) Dissatisfied, (3) Neutral, (4) Satisfied, (5) Very satisfied.

Table 35 Summary statistics for the veterinarian satisfaction questionnaire

Practice	Vet	Mean	Median	Mode	Min	Max	1st quartile	3rd quartile	IQR
A	1	4.3	4.4	4.55	3.65	4.55	4.35	4.55	0.2
	2	4.08	4.15	N/A	3.85	4.25	3.95	4.2	0.25
	3	3.85	3.85	N/A	3.65	4.05	3.80	3.90	0.1
		4.08	**4.05**	**4.55**	**3.65**	**4.55**	**3.85**	**4.3**	**0.45**
B	4	4.27	4.25	4.4	4.1	4.4	4.2	4.4	0.2
	5	3.89	3.8	3.7	3.7	4.15	3.7	4.1	0.4
		4.08	**4.13**	**4.4**	**3.7**	**4.4**	**3.88**	**4.24**	**0.36**
C	6	3.78	3.75	N/A	3.5	4.05	3.65	3.95	0.3
	7	4.3	4.3	4.3	4.2	4.5	4.2	4.3	0.1
		4.04	**4.13**	**4.3**	**3.5**	**4.5**	**3.8**	**4.28**	**0.48**
D	8	4.19	4.1	4.1	3.95	4.5	4.1	4.3	0.2
		4.19	**4.1**	**4.1**	**3.95**	**4.5**	**4.1**	**4.3**	**0.2**
E	9	4.2	4.35	N/A	3.37	4.65	4.15	4.5	0.35
	10	3.87	3.8	3.8	3.8	4.1	3.8	3.85	0.05
	11	3.87	3.85	3.85	3.8	3.95	3.85	3.9	0.05
		3.98	**3.85**	**3.8**	**3.37**	**4.65**	**3.8**	**4.13**	**0.33**
F	12	4.04	4.15	N/A	3.5	4.55	3.8	4.2	0.4
	13	3.84	3.8	N/A	3.15	4.3	3.75	4.2	0.45
		3.94	**3.98**	**4.2**	**3.15**	**4.55**	**3.76**	**4.2**	**0.44**
OVERALL		**4.04**	**4.1**	**3.8**	**3.15**	**4.65**	**3.8**	**4.25**	**0.45**

Individual questions scored on a 5-point adjectival response format: (1) Strongly disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly agree. Scores totalled and divided by number of questions answered. Values calculated by vet and then by practice. NB Questions 3, 6, 8, 10, 12, 15, 17, 18, 19, 20 reverse scored.

Table 36: Summary statistics for the veterinarian satisfaction questionnaire by question

Question	Mean	Median	Mode	Min	Max	1st quartile	3rd quartile	IQR	Unable to assess	Missing values
This was a very satisfying visit for me	4	4	4	2	5	4	4	0	0	0
I got all the detail I needed regarding the patient's history	4	4	4	1	5	4	5	1	0	0
This client constantly complains	1.4	1	1	1	3	1	2	1	0	0
This client is very personable	4.26	4	4	3	5	4	5	1	0	0
I would have liked to spend more time with this client	2.92	3	3	1	5	2	3	1	0	0
I didn't get all the detail I wanted on the patient's problem and signs	2	2	2	1	4	1	2	1	0	0
I established effective rapport with this client	4.25	4	4	3	5	4	5	1	0	0
My time was not well spent in the visit	1.71	2	2	1	5	1	2	1	0	0
The client trusts me a great deal	3.72	4	4	3	5	3	4	1	0	0
I was not effective in influencing this client's behaviour	2.05	2	2	1	5	2	2	0	0	1
I felt adequately trained and confident in treating this patient	4.48	5	5	1	5	4	5	1	0	0
I don't think this visit was necessary	1.4	1	1	1	5	1	2	1	0	0
This client understood my explanations of the medical problem and treatment	4.09	4	4	3	5	4	4	0	0	1
This patient is pleasant to work with	4.23	4	4	2	5	4	5	1	0	0
This visit was boring and unchallenging	1.71	2	2	1	4	1	2	1	0	0
I didn't conduct as detailed a physical exam as I would like	2.37	2	2	1	5	2	3	1	0	0

There are aspects of my relationship to this client that I would like to change	2.15	2	2	1	4	2	3	1	0	0
I could not understand all that this client wanted to tell me	1.48	1	1	1	2	1	2	1	0	0
This client demands a lot of personal attention	1.77	2	2	1	4	1	2	1	0	0
I spent more time with this client than I would have liked	1.91	2	2	1	5	1	2	1	0	0

Scored using a 5-point adjectival response format: (1) Strongly disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly agree
Not applicable = unable to assess, No response = missing value

Table 37: Summary statistics for the vet smiley face scale

Practice	Vet	Mean	Median	Mode	Min	Max	1st quartile	3rd quartile	IQR	Missing values
A	1	4.2	4	5	3	5	4	5	1	0
	2	4.2	4	5	3	5	4	5	1	0
	3	4	4	4	4	4	4	4	0	0
		4.13	**4**	**4**	**3**	**5**	**4**	**4.5**	**0.5**	**0**
B	4	4.6	5	5	4	5	4	5	1	0
	5	4	4	4	3	5	4	4	0	0
		4.3	**4**	**4**	**3**	**5**	**4**	**5**	**1**	**0**
C	6	4.4	4	4	4	5	4	5	1	0
	7	4.8	5	5	4	5	5	5	0	0
		4.6	**5**	**5**	**4**	**5**	**4**	**5**	**1**	**0**
D	8	4.6	5	5	4	5	4	5	1	0
		4.6	**5**	**5**	**4**	**5**	**4**	**5**	**1**	**0**
E	9	3.8	4	4	3	5	3	4	1	0
	10	4	4	4	4	4	4	4	0	0
	11	4	4	4	4	4	4	4	0	0
		3.93	**4**	**4**	**3**	**5**	**4**	**4**	**0**	**0**
F	12	4	4	4	3	5	4	4	0	0
	13	3.8	4	4	3	4	4	4	0	0
		3.9	**4**	**4**	**3**	**5**	**4**	**4**	**0**	**0**
OVERALL		**4.18**	**4**	**4**	**3**	**5**	**4**	**5**	**1**	**0**

Scored using a 5-point visual analogue scale: (1) Very dissatisfied, (2) Dissatisfied, (3) Neutral, (4) Satisfied, (5) Very satisfied

Table 38: Summary statistics for the veterinarian trust scale

Practice	Vet	Mean	Median	Mode	Min	Max	1st quartile	3rd quartile	IQR
A	1	4.84	5	5	4.18	5	5	5	0
	2	4.96	5	5	4.82	5	5	5	0
	3	4.42	4.73	5	3.36	5	4	5	1
		4.74	**5**	**5**	**3.36**	**5**	**4.77**	**5**	**0.23**
B	4	4.71	5	5	3.73	5	4.82	5	0.18
	5	4.95	5	5	4.82	5	4.95	5	0.05
		4.82	**5**	**5**	**3.73**	**5**	**4.82**	**5**	**0.18**
C	6	4.78	4.91	4.91	4.18	5	4.91	4.91	0
	7	4.85	5	5	4.45	5	4.82	5	0.18
		4.82	**4.91**	**5**	**4.18**	**5**	**4.84**	**5**	**0.16**
D	8	4.8	5	5	4	5	5	5	0
		4.8	**5**	**5**	**4**	**5**	**5**	**5**	**0**
E	9	4.8	5	5	4	5	5	5	0
	10	4.76	5	5	4	5	4.82	5	0.18
	11	4.47	4.36	N/A	4	5	4.18	4.82	0.64
		4.68	**5**	**5**	**4**	**5**	**4.27**	**5**	**0.73**
F	12	4.58	5	5	3.91	5	4	5	1
	13	4.76	4.91	5	4.18	5	4.73	5	0.27
		4.67	**4.95**	**5**	**3.91**	**5**	**4.32**	**5**	**0.68**
OVERALL		**4.74**	**5**	**5**	**3.36**	**5**	**4.73**	**5**	**0.27**

Individual questions scored on a 5-point adjectival response format: (1) Strongly disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly agree. Scores totalled and divided by number of questions answered. Values calculated by vet and then by practice

Table 39: Summary statistics for the veterinarian trust scale by question

Question	Mean	Median	Mode	Min	Max	1st quartile	3rd quartile	IQR	Unable to assess	Missing values
The vet put me at ease during the consultation	4.70	5	5	3	5	4	5	1	0	1
The vet behaved in a professional manner	4.84	5	5	4	5	5	5	0	0	1
The vet did not talk down to me or above my head	4.83	5	5	4	5	5	5	0	0	1
The vet was kind and accommodating towards me, but firm when required	4.65	5	5	3	5	4	5	1	2	1
The vet was honest with me if they did not know the answer to a question, or were uncertain about their knowledge	4.60	5	5	3	5	4	5	1	6	2
I believe that the vet would readily seek the advice of others if they had doubts about their diagnosis or recommendations for treatment	4.65	5	5	3	5	4	5	1	1	2
The vet demonstrated their knowledge about my animal's condition by describing the diagnosis completely and precisely	4.73	5	5	3	5	5	5	0	1	2
I trust this vet	4.80	5	5	4	5	5	5	0	0	1
Based on this consult, I would see this vet again for my animal's care	4.80	5	5	3	5	5	5	0	0	1
I trusted that the vet had carefully considered my and their concerns regarding my animal	4.78	5	5	3	5	5	5	0	0	1
I would recommend this vet to others for their veterinary needs	4.77	5	5	3	5	5	5	0	0	1

Scored using a 5-point adjectival response format: (1) Strongly disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly agree
Not applicable = unable to assess, No response = missing value

Of the 65 consultations recorded, 43 were prescribed medication. Of these 29 responded, giving a response rate of 67.4%. 72.4% (n=21) started the prescribed medication on the day of the consult, 20.7% (n=6) started the day after, 3.4% (n=1) started two days later and 3.4% (n=1) elected not to give the medication. Adherence (calculated by comparing the expected versus reported amount of medication remaining) was 100% in 27.6% (8/29) of respondents i.e. the amount reported to be remaining was equal to the expected value. However, assessment of adherence was not possible in 69% (20/29) due to drug formulation (e.g. oral liquid) or deficiencies in drug labelling. One client elected not to give the medication.

Dosing duration was not stated on the medication label for 86.2% (25/29) of prescriptions and only 55% of clients reported being shown how to administer the medication to their pet. Of the clients that were shown, 75% reported being shown by their vet. Finally, 83% of clients reported no discussion of their personal situation to assess the suitability of the treatment schedule.

6.3.2 Associations between instruments

Increased consult length was associated with increased vet satisfaction (smiley face scale) (Rho = 0.332, p=0.007), improved GCRS score (Rho = 0.264, p=0.033) and better OPTION5 (shared decision-making) scores (Rho = 0.264, p=0.034). Being called into the consultation closer to the scheduled time was associated with increased client satisfaction

(smiley face scale) (Rho = 0.287, p=0.021). Finally, increased client waiting time was associated with decreased vet satisfaction on the smiley face scale (Rho = -0.258, p=0.044). Table 40 outlines the relationship between consultation timing metrics and the in-consultation and post-consultation measurements made.

Table 40: Relationship between consult timings and other measurements of the consultation

	Consult length	**Schedule efficiency**	**Waiting time**
CSQ	Rho = 0.110, p=0.388	Rho = 0.172, p=0.175	Rho = 0.197, p=0.132
Client smiley	Rho = 0.184, p= 0.146	**Rho = 0.287, p=0.021***	Rho = - 0.061, p=0.644
VSQ	Rho =0.022, p=0.860	Rho=-0.008, p=0.949	Rho = -0.165, p=0.203
Vet smiley	**Rho = 0.332, p=0.007***	Rho = -0.147, p=0.241	**Rho = -0.258, p=0.044***
VTS	Rho = -0.067, p=0.601	Rho = -0.035, p=0.781	Rho = -0.107, p = 0.417
GCRS	**Rho = 0.264, p=0.033***	Rho = 0.136, p=0.279	Rho = -0.196, p=0.130
7steps	Rho = 0.213, p=0.089	Rho = -0.011, p=0.929	Rho = -0.184, p=0.156
OPTION5	**Rho = 0.264, p=0.034***	Rho = 0.156, p=0.214	Rho = -0.032, p=0.806

** indicates significant result*

Significant associations also existed between some in-consult measures and post consultation measures of success; GCRS and OPTION5 scores showed significant correlation with client satisfaction and 7steps scores significantly correlated with client trust in the vet. Table 41 outlines the relationship between in-consultation and post-consultation measurements.

Table 41: Relationships between in-consultation and post-consultation measurements

	GCRS	7steps	OPTION5
CSQ	**Rho = 0.254** **p = 0.043***	Rho = 0.245 p = 0.051	**Rho = 0.322** **p = 0.010***
Client smiley	Rho = 0.223 p = 0.076	Rho = 0.101 p = 0.426	**Rho = 0.250** **p = 0.046***
VSQ	Rho = 0.222 p = 0.075	Rho = 0.215 p = 0.086	Rho = 0.136 p = 0.279
Vet smiley	Rho = 0.110 p = 0.382	Rho = 0.189 p = 0.131	Rho = 0.07 p = 0.579
VTS	Rho = 0.194 p = 0.125	**Rho = 0.275** **p = 0.028***	Rho = 0.230 p = 0.067

***** *indicates significant result*

The two assessments of client satisfaction were shown to have a significant correlation with each other, as were the two assessments of vet satisfaction. This suggests that the visual analogue scales could be used as a proxy for the full questionnaires. Client satisfaction showed a significant association with vet satisfaction. Trust correlated with all other measures of post consult satisfaction. Table 42 presents these associations in more detail.

Table 42: Relationships between post consultation measures of success

	CSQ	Client Smiley	VSQ	Vet smiley	VTS
CSQ					
Client Smiley	**Rho = 0.483** **p < 0.005***				
VSQ	**U = 1073** **p < 0.005***	Rho = 0.211 p = 0.094			
Vet Smiley	Rho = 0.152 p = 0.230	**U = 921** **p < 0.005***	**Rho = 0.609** **p < 0.005***		
VTS	**Rho = 0.531** **p < 0.005***	**Rho = 0.438** **p < 0.005***	**Rho = 0.484** **p < 0.005***	**Rho = 0.345** **p < 0.005***	

***** *indicates significant result*

Finally, a comparison was made between the question “I believe this client trusts me a great deal” (a question from the VSQ) and “I trust this

vet" (a question from the VTS). Vets perceived client trust to be significantly lower than the actual client reported trust (Mann-Whitney U = 407.5, $p<0.005$).

6.3.3 Reliability testing

6.3.3.1 Internal consistency

All measurement tools showed good to excellent internal consistency except for 7steps which was poor (α= 0.572). Full results are presented in Table 43.

Table 43: Internal consistency results for each instrument

Instrument	Cronbach alpha
Client Satisfaction Questionnaire	0.957
Veterinarian Satisfaction Questionnaire	0.764
Veterinarian Trust Scale	0.959
Global Consultation Rating Scale	0.879
7 steps consult scoring	0.572
OPTION5	0.907

6.3.3.2 Inter-rater reliability

Percentage 7steps demonstrated excellent inter-rater reliability with GCRS and OPTION5 instruments demonstrating substantial inter-rater reliability (Table 44).

Table 44: Inter-rater reliability results for in-consult measurement tools

Consult	7steps (percentage)		GCRS (total)		OPTION5 (total)	
	Rater 1	Rater 2	Rater 1	Rater 2	Rater 1	Rater 2
45	76.32	81.58	20	21	19	16
46	44.74	51.43	4	9	0	6
48	62.16	63.89	11	13	5	6

56	76.47	62.86	19	13	12	8
62	96.15	86.67	22	16	17	11
73	77.14	79.41	19	21	17	17
Lin's Concordance Correlation Coefficient	0.8533 95% CI (0.4880,0.9642)		0.7014 95%CI (0.1522,0.9196)		0.7648 95%CI (0.3708,0.9254)	

6.3.3.3 Intra-rater reliability

OPTION5 demonstrated excellent intra-rater agreement with 7steps demonstrating substantial, and GCRS demonstrating moderate intra-rater reliability (Table 45).

Table 45: Intra-rater reliability results for in-consult measurement tools

Consult	7steps (percentage)		GCRS (total)		Option 5 (total)	
	1	2	1	2	1	2
7	60.00	60.00	20	15	13	11
10	75.00	75.00	15	21	3	2
18	86.11	78.79	14	8	2	2
22	72.22	71.05	23	23	7	6
28	81.82	81.82	23	23	17	20
45	63.16	76.32	19	20	16	19
Lin's Concordance Correlation Coefficient	0.7213 95%CI (0.1575,0.9304)		0.6048 95%CI (-0.006,0.8869)		0.9557 95%CI (0.8624,0.9862)	

6.3.4 Qualitative analysis of free text responses

There was a response rate of 56.9% (37/65) from participating vets and 27.7% (18/65) from clients. Thematic analysis generated four themes: 'Cooperation', 'Professionalism', 'Time' and 'Diagnosis vs Plan'.

6.3.4.1 Cooperation

Cooperation was a concept raised by both groups of respondents and was the ability of the vet to achieve the consultation objectives e.g. whether the pet was amenable to handling, or the client was

forthcoming with the information required to reach a diagnostic or treatment decision.

"Owners were not very forthcoming with history. Patient muzzled which makes exam less rewarding"
– Vet 9

6.3.4.2 Professionalism

Furthermore, both vets and clients wrote about the need to balance client expectations, the animal patient and responsibility to the veterinary profession in line with the accepted definition of veterinary professionalism (Mossop, 2012).

"Chronic issues can be tricky to sort - trying to improve care without inadvertently causing problems to previous vet is important to me"
– Vet 8

6.3.4.3 Time

Interestingly, and in contrast to other findings from this thesis, time was a focus for client responders but much less so for vets. Clients wrote about time in terms of their perception and feelings of the time taken in the consult, rather than the absolute time spent.

"Did not feel rushed, patient vet"
– Client 77

6.3.4.4 Diagnosis vs plan

As with the focus group findings, the perspective, priorities and language of the vet respondents were markedly different to that of the clients. Vets wrote about the consultations in terms of reaching a

diagnosis, whilst clients focussed on the value of leaving the consultation with a plan.

"This case needs worked up as is a chronic condition so further diagnostics will lead to a more satisfying outcome in order to diagnose and treat/manage"
– Vet 3

"Very happy with the consult, we put a 3-week plan in place"
– Client 42

6.4 Discussion

6.4.1 Consult characteristics

Dogs were the most common species presented in this study, in line with other research on UK patient demographics (Everitt et al., 2013; Robinson et al., 2015a; Sanchez-Vizcaino et al., 2017). Whilst dogs were slightly over represented and cats slightly underrepresented when compared to these studies, this may be due to the study's small sample size. Furthermore, the proportion of the study population which were neutered exceeded the 55.7% reported by Robinson *et al.* (2015), but was lower than the 71% of dogs and 91% of cats reported by the PDSA in their annual PAW report (PDSA, 2018). Therefore, it would seem likely that the proportion of neutered animals in this study was representative of the UK in general.

The attainment of a definitive diagnosis during the first consultation was low, being reached in only 12.3% of the consults, even lower than the 20.7% reported by Robinson *et al.* (2016). Furthermore, this finding is in

stark contrast to the expectations voiced by the veterinary surgeons during the qualitative portion of this thesis, many of whom discussed achieving a diagnosis as critical to consultation success. This mismatch of expectation and reality is likely to contribute to dissatisfaction within the veterinary profession. To this end, an effort to reframe veterinary surgeon expectations could assist with veterinary surgeon morale and reduce an individual's self-pressure to achieve a diagnosis within the first consultation.

6.4.2 Time metrics

The appointment length allocation for the majority of consultations recorded for this study was 15 minutes, which is in line with recent findings (Corah *et al*., unpublished data) and exceeds an average of 10 minutes reported by Gray and Cripps (2005). Increased consult length was associated with improved communication, decision making and vet satisfaction. The median consultation length was 15:19, and whilst this is only slightly in excess of the allocated time, this represents the length of the face-to-face interaction between vet and client and does not include the time required to read the necessary patient notes and produce accurate clinical records.

Vets participating in this study on average ran 6 minutes late, and it is unsurprising that client satisfaction correlated with being seen on time. Furthermore, the association between increased client waiting time and a decrease in vet satisfaction suggests that running late affects morale

and is likely to further increase consult time-pressures. However, the desire for increased consultation length may actually be a desire for allocated time to facilitate the required administrative processes of a consultation, rather than a desire for longer client interactions. Indeed, the results of the question “I would have liked to spend more time with this client” presented to the vets as part of the VSQ (Shaw et al., 2012a), found that vets were neutral when it comes to longer interactions. This may be due to the fact that all participating practices offered 15-minute appointments, however allocating additional time for the completion of essential consult administration would seem sensible, in order to allow consultations to run to schedule.

6.4.3 Communication

For the in-consultation measures of communication, median scores were similar; 76.32% (7steps) and 79.17% (GCRS). Furthermore, GCRS scores were positively associated with client satisfaction and 7Steps scores positively associated with trust. However, there is currently no data to indicate whether these values are representative of all UK veterinary surgeons or what value could be considered ‘good’.

However, it should be noted that patient assessments of doctor communication abilities have been shown to be variable when compared to trained-rater measurements (Burt et al., 2018). To this end, an assessment of the relative performance of the individual vet

and practice can be made, but care should be exercised when attempting to interpret their absolute scores.

The inter-rater reliability of the GCRS was 0.70 (95% CI 0.15 to 0.92) for two raters which is not dissimilar to the reliability reported by the original authors of the tool (0.73 (95% CI 0.44 to 0.79) (Burt et al., 2014). Burt *et al.* (2014) also reported that inter-rater reliability improved with additional raters; it follows that this may also be true in this context, further work should be done to assess this prior to using the tool in a larger study.

The low internal consistency of 7steps suggests that the instrument measures numerous constructs, rather than just one. However, both the inter- and intra-rater reliabilities were in excess of 0.7, suggesting good reliability. A review of the instrument items should be performed before utilising the measure in a larger study.

6.4.4 Decision-making

The inter-quartile range of the OPTION5 scores suggests that there is large variation in the level of shared decision-making demonstrated by the vets in this study. As this instrument has not been used in a veterinary setting before, once again, it is difficult to determine whether a mean OPTION5 score of 50.54% is acceptable. However, it should be noted that there was a positive association between OPTION5 scores and client satisfaction.

Dillon *et al.* (2016) reported mean OPTION5 score of 27.2% (range: 2.5 to 75) in medical practitioners in the USA whilst Stubenrouch *et al.* (2016) reported a mean OPTION5 score of 39.3% for hospital doctors in the Netherlands. Certainly, the mean scores attained for this study are far in excess of those previously reported in other fields. This could be due to differing contexts of the study populations or perhaps due to differences between veterinary and medical teaching. In addition, a changing client demographic, to one of increasing expectations as a consumer, could affect the desired involvement in decision-making.

However, the tool itself is not without significant limitations; scores are attributed based on a subjective assessment of clinician 'effort' in aspects of reaching a shared decision. Furthermore, the findings from the focus group chapter, that shared-decision making exists upon a spectrum and that different amounts of vet and client input into the decision is both normal and necessary, raise questions about the usefulness of the tool itself as an assessment of the decisions made.

6.4.5 Satisfaction and trust

Client participants in this study were generally very satisfied with their consultations, whilst the vets were less so. Moreover, client trust in the vet was also high, with vet perceptions of client trust to be significantly lower. These findings once again suggest a reframing of veterinary

surgeon expectations is required. An awareness of this mismatch could improve the profession's morale.

The associations found between each satisfaction questionnaire and their respective smiley face scale, suggests that the use of the simple visual analogue scale is useful proxy for assessing stakeholder satisfaction in the veterinary setting. However, if satisfaction ratings were to fall, the use of the full questionnaires would be more appropriate, in order to elicit problem areas. Nevertheless, the use of a visual analogue scale is a simple, appropriate and pragmatic tool for veterinary general practice.

Despite the high satisfaction ratings from clients, there were areas for improvement highlighted by the CSQ. In particular, vets were worst at discussing costs and recognising the role of the pet in the owner's life. These findings support those reported by Coe (2008) and McDermott (2018). They also support the importance of considering the context of the consult, as discussed in the focus group chapter.

The use of Likert scales to measure satisfaction with surveys was discussed in the narrative review. However, it is important to reiterate their likelihood to overestimate patient satisfaction (Williams et al., 1998) due to subjective interpretation of satisfaction or differences in stakeholder expectations (Collins and O'Cathain, 2003). Furthermore, Gallan *et al.* (2017) compared patient survey scores with a qualitative

analysis of the associated free-text comments and found that despite a patient giving a perfect survey score, the comment associated with it was often not positive. It is important to acknowledge this when appraising the results of any satisfaction survey.

6.4.6 Adherence

Client trust and satisfaction are a fundamental pillar in adherence, and therefore optimal patient outcomes. However, additional findings from the adherence portion of the study raise concerns, particularly the paucity of dosing instructions on dispensed medication. RCVS Practice Standards Scheme requirements for drug labelling include “dosage and directions for use”. Whilst this requirement is vague, it could be argued that directions for use should include dosing duration. Certainly, there is room for improvement in the communication of written dosing instructions, which could have implications for adherence.

Additionally, the finding that many clients are not being shown how to administer medication to their pet suggests that communication opportunities are being missed, not only in the consult but potentially also by other suitably qualified persons in the practice. Finally, an assessment of the suitability of the treatment schedule was not performed in the majority of consults recorded for this study. Again, this has the potential to have a significant impact upon adherence, as it may not be possible for the client to administer the medication depending on their personal circumstances.

The measurement of adherence was not without limitations. In order to make an assessment of adherence, a definition was necessary, but there are numerous ways to define and measure adherence the most practical of which is client self-reports (Adams et al., 2005). However, care was taken with question wording to minimise response bias, in particular social-desirability bias (Lavrakas, 2008).

6.4.7 Free text responses

Free-text responses were in-line with the focus group findings, providing further support for the themes identified.

Once again, there was a contrasting consult narrative from the vet compared to the client. The focus of client comments was the formulation of a plan, but not necessarily a diagnosis for their pet, whilst vets appeared focussed on achieving a diagnosis. The reasons behind this are unclear and likely complex. It could be because clients assume an unspoken level of competence in a vet's diagnostic ability. Or that whilst clients want a diagnosis, they are pragmatic with an acceptance of uncertainty and a rational expectation of the consultation and of the vet.

There have been numerous studies in human healthcare examining free-text comments in surveys. Free-text comments can allow for a more in-depth answer, identify new issues, assist with the development of new research questions and provide opportunities for the

respondents to provide feedback on the research process (Garcia et al., 2004). However, the free-text responses on the post-consultation surveys were optional and participants in the study were often rushed for time. In addition, the demographics of the respondents may have affected the responses. Riiskjær et al. (2012) found the likelihood of a patient providing a free-text comment was highest for the least and most satisfied patients. In addition, the authors reported that female respondents were more likely to provide free text comments and a patient's likelihood of commenting decreased with age. However, despite the limitations, it is still of benefit to include free-text responses when administering satisfaction surveys to allow for more in-depth feedback on the consultation experience.

6.4.8 Limitations

Whilst this chapter has reported numerous thought-provoking findings, they must be interpreted in light of the study's limitations. Firstly, this was a preliminary study totalling 65 consultations and utilising a convenience sample. Furthermore, for reasons of data protection, no data was collected on clients declining to participate in the study or withdrawing partway through. Those that declined cited reasons including time taken to complete post consult surveys and not wishing to be filmed due to the severity of their pet's illness.

The use of action-cameras in the consultation had the potential to influence the interaction; however, the cameras were small and

unobtrusive. Furthermore, the use of a camera was considered to be less invasive than direct consult observation with the researcher in the room. In addition, many clients commented to the researcher that they did not spot the cameras in the consult room, and no participants, vet or client, were seen looking at the cameras whilst reviewing the consults for their communication and decision-making.

6.5 Conclusion

This chapter has shown a positive association between client satisfaction and the in-consultation measurements of communication and shared decision-making. However, arguably the most interesting finding was the mismatch between client and vet levels of satisfaction and trust. This phenomenon warrants further investigation as it could be fundamental to improving the wellbeing of the veterinary profession.

The wider assessment structure implemented for this study had its limitations, in particular the time intensity of data collection. Through consideration of the findings of this study, it is proposed that the use of a simple, 5-point visual analogue (smiley face) scale, administered to both the vet and the client, is a pragmatic and appropriate instrument for assessing general practice consultations. However, in order to obtain a more detailed consultation assessment, the use of additional scoring instruments will be necessary.

The final chapter of this thesis will provide a holistic discussion of the findings and propose avenues for further work.

7 Discussion

7.1 Overview

The literature review (chapter two) argued for the necessity of balance between stakeholder expectations, despite the service-industry nature of the veterinary profession, in order to maintain consultation collaboration and satisfaction. Subsequently, the systematic review reported a paucity of good-quality evidence for the appraisal of success of small animal, health problem consultations. However, despite the limited evidence, adherence and stakeholder satisfaction were identified as published measures of consultation success. The qualitative study (chapter five) proposed a definition for the 'good' consultation and argued for a reframing of consultation skills teaching with a greater emphasis on shared decision-making. Finally, a model for consultation appraisal was proposed and validated using real-world, recorded consults (chapter six).

This final discussion chapter will provide a holistic discussion of the findings from the thesis and propose areas for further research. Furthermore, the argument will be made for a simplified and pragmatic consultation assessment tool and a re-calibration of veterinary surgeon consultation expectations.

7.2 Key thesis findings

This section highlights the key findings of this thesis, placing them into context with each other and with other research.

7.2.1 The definition of a good consultation

The primary research question of this thesis was to characterise a 'good' consultation and each of the data chapters has contributed to reaching an answer. Through aggregating the findings, it is proposed that the definition of a good consultation is as follows:

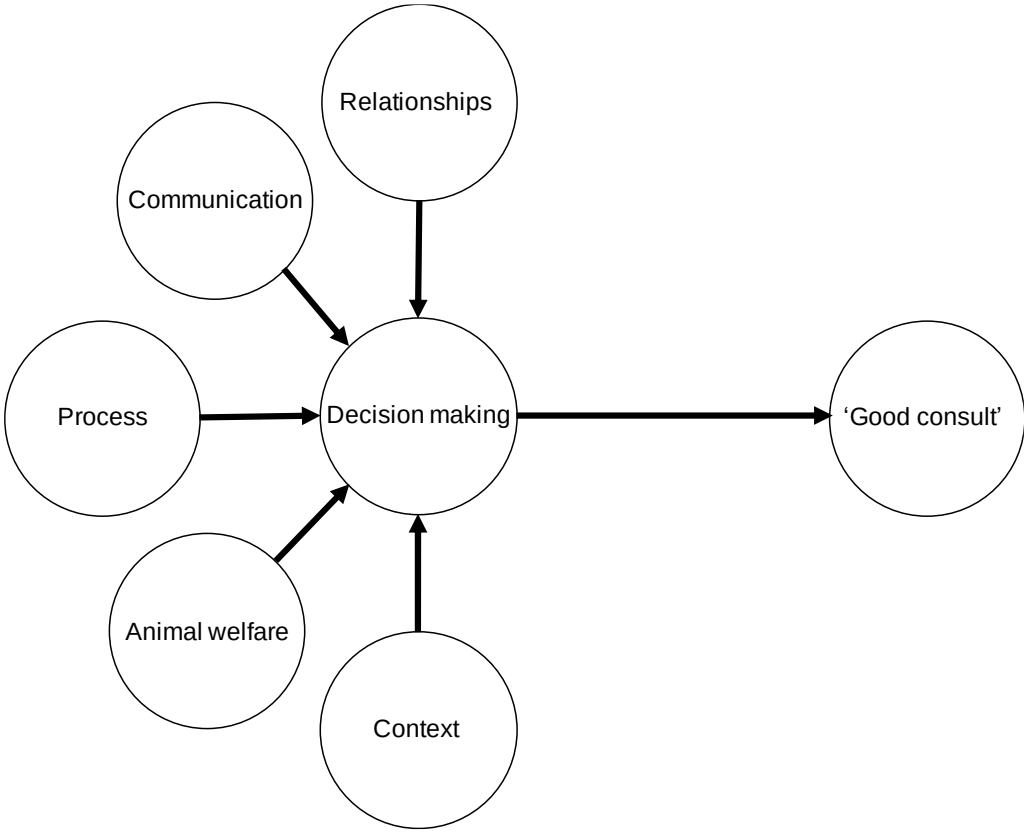
A good consultation can be defined as one where there is balance; an appropriate shared-decision is reached through two-way communication, all stakeholders are in agreement regarding the next steps, with the patient's welfare maintained or improved.

To the author's knowledge, this is the first time an explicit definition encompassing three key stakeholders participating in the consultation has been proposed. The following subsection proposes a strategy to achieving the good consult.

7.2.2 Achieving a good consultation

Whilst the primary thesis objective was to define a good consultation, possible methods of achieving were also considered. Through the qualitative portion of this thesis, it was identified that good consults require collaboration, communication and trust, in order to build meaningful relationships. There was also a strong desire from client participants for a bespoke and contextualised shared decision, achieved through understanding the vet's thought-processes, and the

implications of any decisions made. Figure 19 (presented in chapter five) is reproduced below to assist with reader clarity.



Attendance to the patients ideas, concerns and expectations (ICE) is present in some form, in multiple medical consultation models (Larsen et al., 1997; Lassen, 1991; Neighbour, 1987; Pendleton et al., 1984). Whilst it has been used in veterinary teaching, it has yet to be widely researched or published in veterinary consultation teaching. It is proposed that ICE should be added to the communication competencies that are already taught, as it is a foundational step on the journey to reaching a shared decision. To this end, Figure 30 proposes a "10 Whats" approach to achieving the optimum consultation.

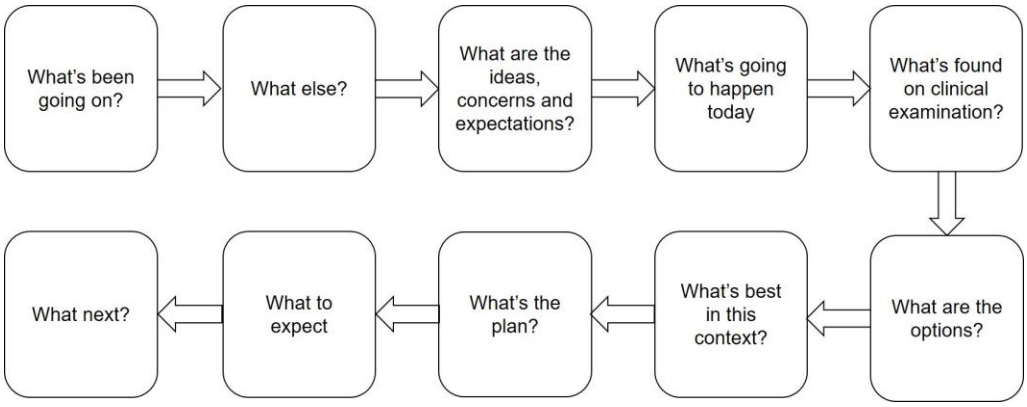


Figure 30: *The "10 Whats" approach to the consultation*

Whilst this model describes many communication competencies that have already been described in the medical and/or veterinary literature, it provides a new perspective on their application. It is proposed that through the use of this approach, all aspects identified as fundamental to a successful consultation in this thesis are incorporated. Furthermore, it is a simplified strategy, when compared with the Calgary-Cambridge model (Radford et al., 2006), which would be applicable to both undergraduate and postgraduate teaching.

Given that unmet client expectations have been shown to contribute to dissatisfaction (of both clinician and patient) and reduce adherence (Bell et al., 2002), and that there is a positive association between patient experience, clinical efficacy and patient safety (Doyle et al., 2013), understanding the ideas, concerns and expectations of a client in the consultation is important on numerous levels. In addition, research has shown that both adherence and satisfaction are correlated with the perception of sufficient consult time, rather than the absolute consultation length (Grave and Tanem, 1999; Ogden et al., 2004). It

follows that acknowledging ICE within the consultation will lead to improved outcomes. Furthermore, building rapport has been shown to significantly shorten consultation length with appointments an average of one and a half minutes shorter when rapport building statements were used (Shaw et al., 2004b). To this end, it can be argued that the pragmatic and relationship-centred approach of the 10 Whats is achievable within a 10 or 15-minute consultation. However, despite the evidence that a relationship-centred care approach to the consultation is both desired and expected by veterinary clients, there may be some barriers to their implementation in the veterinary consult. Barriers could include the perception that integrating shared decisions into a consultation is difficult, scepticism from, or paternalistic nature of, some veterinary surgeons. Further research is required to gather stakeholder opinions of the 10 Whats approach, and whether adopting this approach improves consultation outcomes.

This section has provided a definition of a good consult and means to achieving it. The following subsections discuss issues highlighted by this thesis as barriers to achieving a good consult.

7.2.3 Time is a complex issue

The issue of consult length was a theme which recurred throughout the thesis. Vets cited time as a significant barrier to optimal consultations during the focus group study and this was supported by the scoring study; communication and decision-making processes were found to be

improved in longer consultations, and better communication and decision-making scores improved client satisfaction. In addition, vets were more satisfied during longer consults, however there was no association between consult length and client satisfaction, although this could be due to the clients perceiving that the time spent was enough, in line with findings from Ogden et al. (2004). It could be argued that due to the service nature of the profession, the satisfaction of the service user is the priority and therefore the barrier posed by time to vets is of less significance. However, the definition of a 'good' consultation encompasses all stakeholders and argues that each participant carries influence within the interaction. In addition, there are wider concerns within the veterinary profession regarding workforce retention and mental health and well-being (Dawson and Thompson, 2017; Gardner and Hini, 2006; Schoenfeld-Tacher et al., 2017; Vet Futures Project Board, 2015a), which further highlight the important of veterinary surgeon satisfaction. To this end, time continues to be a threat to the good consultation.

Consultations recorded for this study frequently exceeded the time allocated for them, with both the mean and median SHP consult length exceeding the 15 minutes allocated, and clients frequently seen late. In addition, the average consult length in this study (mean: 16 minutes 39 seconds, median: 15 minutes 19 seconds) was increased when compared to the median of 9 minutes 49 seconds reported by Robinson et al. (2014) and the mean of 11 minutes 45 seconds reported by Everitt

et al. (2013). This raises some concerns that despite the increase in allocated consultation length, consultations were still exceeding the scheduled allowance. However, the range of consult length across all studies was similar, suggesting that the increased average was due to the nature of the consults examined. To this end, it is proposed that an allocated appointment length of 15 minutes may not be sufficient for specific health problem consultations.

However, veterinary practices are businesses, and so the negative financial implications of increasing consultation length, therefore reducing the number of patients seen per hour, must be considered before rolling out any scheduling changes. One possible approach to minimise the difference between allocated consult length and the actual length of the consult is to maximise case- and client-continuity, based upon the finding that decision-making is quicker and easier when there are pre-existing relationships between vet and client.

Clearly, the consultation length debate is complex, as is the role of actual versus perception of time in the consultation. Further research is required to investigate the relationship between allocated consultation length and average transaction values, to facilitate the compromise between consultation length and consultation pricing.

A restructured approach to the consultation could provide an additional strategy to improve schedule efficiency. This restructured approach

centres around the conceptualisation of the role of the key in-consult stakeholders; namely the veterinary surgeon and the client, which is examined in the following subsection.

7.2.4 The role of the vet and the client

There are two roles which are shared by vet and client in the consultation, that of decision partner and patient advocate. However, there are additional roles, specific to each stakeholder.

The client is the plan-facilitator; it is ultimately the client who must administer the medication or return for further consultations. Furthermore, it should not be forgotten that the client is also a service user meaning their satisfaction is key.

The RCVS state that the role of a veterinary surgeon is to "*seek to ensure the health and welfare of animals committed to their care and to fulfil their professional responsibilities by maintaining five principles of practice: Professional competence, Honesty and integrity, Independence and impartiality, Client confidentiality and trust and Professional accountability*" (Royal College of Veterinary Surgeons, 2012).

However, this definition is nebulous, encompassing all aspects of the role of a veterinary surgeon. A more specific description should be considered in terms of consultation, whilst continuing to encompass the

guidance set out by the RCVS. It is proposed that the role of the vet in the consultation should be one of guidance, providing a professional opinion based on evidence and experience, in line with client expectations.

However, there is a mismatch between vet and client; amongst vets, there is a perception that the client expectation is for rapid problem resolution, often of multiple presenting problems, in a single consultation. Attempting to achieve multiple problem resolution within 15 minutes is often unrealistic and failing to attain it could contribute to the time pressures and low morale felt by the profession. One solution would be a shift towards an inter-professional approach to consulting. Utilising the vast skillsets of RVNs, could ensure that clients continue to receive high standards of service, whilst reducing the time pressure felt by veterinary surgeons.

7.2.5 Vet-client mismatch

In addition to the incongruity identified with respect to the role of the vet in the consultation, there were two further mismatches identified.

The first was a significant contrast between the vets' desire for a diagnosis, with the clients' desire for a plan, a theme which recurred in both the focus group and consult scoring studies. When examined within the context of the finding that a definitive diagnosis was reached in only 12.3% of the recorded consults, the impact of this could be

significant contributor to veterinary surgeon dissatisfaction and perhaps to the workforce retention and wellbeing concerns of the wider profession. It is fundamental that a shift occurs within the profession to promote a plan-focussed, rather than a diagnosis-focussed consultation strategy among veterinary surgeons. It could also reduce the widely held perception that all problems must be addressed in the first consultation.

A further discrepancy occurred between vet and client trust and satisfaction levels; vets were consistently less satisfied with the consultation than the clients, and perceived lower levels of trust than those reported by the client participants. It is possible that there is an element of response bias exaggerating the difference between vet and client trust perceptions. Nevertheless, this raises significant concerns for the profession's wellbeing, although what can be done to change this mind-set remains unclear.

7.2.6 Consultation relationships

Another novel finding of this thesis has been that the interactions within the consultation are not triadic as previously postulated but six-way in nature (vet-client, vet-pet, vet-practice, client-pet, client-practice and client-profession). The relevance and impact of the findings must be considered in light of this; the consultation influences, and is influenced by, multiple contexts, not just those present in the consulting room during the interaction. Furthermore, this thesis has provided further

evidence for a relationship-centred approach to the consultation. To this end, it is proposed that the relationship-centred approach should be integrated into clinical teaching, to encourage consideration of consultation contexts and relationships. Figure 31 provides an example of how these considerations could be integrated into clinical teaching.

Diabetes mellitus

- Clinical signs: PUPD, weight loss, appetite changes
- Diagnosis: Blood glucose, biochemistry, urinalysis
- Treatment: Insulin
- Patient considerations: Temperament for repeat diagnostics and treatment
- Client considerations: work/home situation, finances, relationship with pet

Figure 31: *Example of integration of non-technical skills into clinical teaching*

7.2.7 Decision making; a new focus

Prior to this thesis, communication in veterinary medicine was the aspect of consultations which had been most widely studied. The communication findings of this thesis have shown that it continues to be of significant influence in consult. However, this thesis reasons that the focus of the consultation should be one of decision-making, with communication as one of the necessary facilitators. In addition, an argument was made in chapter five to re-conceptualise shared decision-making as a balance, but not one that is necessarily equal.

Decision-making research is in its infancy in veterinary medicine; however, it is increasing well researched in the medical literature. One concept which may be deserving of future research in the veterinary context is the use of client activation tools as a means to improve communication around decision-making; it has been shown that the use of patient activation tools improves shared decision making in the medical setting (Dillon et al., 2017).

7.2.8 Measuring the consultation

The previous subsections have discussed the definition of a good consultation, proposed a strategy to achieving it and identified barriers to success. This section examines the validity of the instruments used to measure consultation success and makes recommendations for a pragmatic consult assessment tool for use in first opinion small animal practice.

In Chapter three (Methodology), an argument was made for the application of Kane's validity framework (Kane, 2001) to build the validity argument for this thesis. Table 46 provides the mapping of the thesis to Kane's validity framework whilst Table 47 provides the evidence to support the validity argument.

Table 46: Kane's validity framework: mapping to thesis chapters

Step	**Practical approach to Kane's validity framework** (Cook and Hatala, 2016)	**Practical approach applied in context of this thesis**	**Addressed in which chapter?**
1	Define the construct of interest	Small animal, health problem consultations	-
2	Make the intended decisions explicit	Assess consult performance and identify feedback points for the vet	Consult scoring
3	Define the interpretation-use argument (Identify and test assumptions) and prioritize what validity evidence is needed	Looking for instrument(s) which can quantify consultations with the interpretation-use argument.	Consult scoring
4	Identify candidate instruments and/or create/adapt a new instrument	Candidate instruments identified across all three data chapters	Systematic review, focus groups and consult scoring
5	Appraise existing evidence and collect new evidence as needed (validity argument)	Critical appraisal of existing instruments Validity and reliability testing of new instruments	Systematic review, consult scoring
6	Keep track of practical issues including cost	Pre-pilot and pilot to assess practical issues	Consult scoring
7	Compare the validity argument with the interpretation-use argument	Identify any gaps in evidence for scoring, generalisation, extrapolation and implications of the chosen tools	Consult scoring and discussion
8	Make a judgment: does the evidence support the intended use?	Make judgement on whether the instrument(s) can be used to assess small animal health problem consultations	Discussion

Table 47: Consultation scoring validity argument

Scoring	Are observations correctly turned into consistent numeric scores?	Cronbach's alpha to assess internal consistency	**Instrument**		**α**	**Valid?**
			Client Satisfaction Questionnaire		0.957	✓
			Veterinarian Satisfaction Questionnaire		0.764	✓
			Veterinarian Trust Scale		0.959	✓
			Global Consultation Rating Scale		0.879	✓
			7 steps consult scoring		0.572	x
			OPTION5		0.907	✓
Generalisation	Score of single consult aligns with overall scores	Ensure adequate sampling and assess whether scores are reproducible between performances and raters	**Instrument**		**Lin's CCC**	**Valid?**
			Inter-rater reliability	7steps	0.8533	✓
				GCRS	0.7014	✓
				OPTION5	0.7648	✓
			Intra-rater reliability	7 steps	0.7213	✓
				GCRS	0.6048	x
				OPTION5	0.9557	✓
Extrapolation	Scores correlate with other measures of performance	Assess if in-consult scores correlate with post consult measurements	**Instrument**	**Correlations**		**Valid?**
			7steps	✓		✓
			GCRS	✓		✓
			OPTION5	✓		✓
Implications	Assessment has positive effect on stakeholders with minimal negative effects.	Assessment of impact of consultation scoring	All consult scoring was performed by a single researcher and had a minimal impact on the running of consultations for the participants. However, analysis-load was considerable for the researcher.			✓

Based upon the validity argument presented in Table 47, all scoring tools used in this study were valid means of assessing consultations. However, whilst performing well on each of the four constructs of the validity argument, the validity of the OPTION5 tool should be assessed in light of the re-conceptualisation of shared decision-making proposed by this thesis. In addition, a review of the 7steps items should be performed before utilising the measure in a larger study given the low internal consistency.

Furthermore, the analysis load created by performing all measures on each consultation is likely to pose a significant barrier to their implementation outside of the academic environment. To this end, a pragmatic compromise is recommended; the ‘smiley face’ tool provides a simple assessment measure for use in general practice to gauge satisfaction of key stakeholders. Should ‘smiley face’ ratings drop consistently, the long-form satisfaction measures and an assessment of in-consult communication could be implemented, in tandem with further training in communication and decision-making.

7.3 Recommendations arising from this thesis

Based upon the thesis findings, a number of recommendations are proposed. Table 48 presents the recommendations for the veterinary profession and veterinary education providers.

Table 48: Recommendations for the veterinary profession and education providers

	Recommendation
There is a complex network of relationships and contexts which influence the consultation	It should be understood that these relationships and contexts exist Dissemination of the "context iceberg" could assist with promoting this concept Additional integration of professional skills within clinical teaching to encourage engagement
Calgary-Cambridge model currently taught with focus on communication skills	Greater emphasis should be placed upon consultation decision-making during communication skills teaching with the addition of the "10 whats" to undergraduate teaching, in addition to Calgary-Cambridge
Case continuity improves client satisfaction and speeds-up decision making	Client and case continuity are justified and should continue to be promoted for both client-centred and business-centred reasons
Clients expect to be part of the decision-making process	Introduce Ideas, Concerns and Expectations (ICE) into communication skills training
Clients desire a variable input into decision-making	It is the vet who should accommodate this within the consultation Dissemination of the concept of "see-saw" of shared decision-making Research required into client activation tools which could improve shared decision making
Client trust and satisfaction are high but vet and client perceptions of consult satisfaction and trust are not aligned	Dissemination of this finding is important in beginning to create mind-set change in the profession
Disparity between vet and client perceptions of the role of the vet	Promote a plan- rather than diagnosis-focussed identity within the profession
Assessing consultations is achievable in general practice	Implement 'smiley face' scales as a simple assessment tool. If satisfaction is dropping, can investigate further with long form questionnaires

	Consider gaining consent from clients to record consultations to facilitate the reflective process as part of continuing professional development Assessment of in-consultation decision making processes requires further research
Many consultations continue to exceed the allocated length	Inter-professional approach to consulting with better utilisation of RVNs More research is required to assess the costs and benefits of increasing the allocation for specific health problem appointments
Vets continue to communicate the financial aspects of consultations inadequately	This should be an area of focus for veterinary educators

7.4 Limitations and future work

The limitations of the studies in this thesis have been discussed in their respective chapters and included small sample sizes, raising questions regarding the generalisability of the findings. However, through triangulation of the three studies, a stronger argument can now be made for their generalisability. Nevertheless, the use of the consultation scoring instruments in a larger study could allow identification of additional associations, not identified in this thesis.

Further investigation into the relationship between consult length and average transaction value would also be of benefit to the profession, allowing a balanced debate as to the optimum consultation length whilst acknowledging the needs of all stakeholders.

Further research into decision-making would be of significant benefit, including research into the use of client activation tools and the development of a new decision-making assessment instrument, in light of the novel theoretical approach to shared decision-making. Furthermore, additional work exploring the effect of clinical severity on the decision making of the ‘good consult’ is warranted as this thesis has focused solely on first presentation, specific health problem consultations, without investigation of these factors. Future research examining ‘good’ in terms of different consultation types, such as complex medical presentations, euthanasia or terminal diagnoses would be of benefit, and allow comparison between contexts. In addition, research

examining equine and farm animal consultations would also be of value to explore species related contextual differences.

Nevertheless, utilising the broad framework set out by the definition, it could be argued that the fundamental factors contributing to a good consultation, namely a shared decision and maintenance of patient welfare, are likely to remain consistent across veterinary contexts. However, it is important to consider all thesis findings in light of the post-positivist perspective of this researcher. To this end, the proposed definition of a ‘good’ consultation should be utilised as a framework or lens through which to assess consultations, but the definition may require modification in a novel setting or in light of new information.

The thesis set out to provide a definition of a good consultation, and whilst the definition is not without limitations, as outlined above, it does offer new insight into the purpose of the small animal consultation and the roles of the respective stakeholders. To this end, the first research question has been answered. Furthermore, chapter six has identified several possible ways to measure the success of consultations, again addressing the second aim of this thesis.

The findings of this thesis and the recommendations arising from them certainly highlight the difficulties of researching this complex topic. It was important to the researcher to ensure the findings could be utilised in a general practice setting, not just an academic one. To this end, many of the

decisions regarding the measurement tools selected for the final study were to ensure that this thesis remained relevant to practicing vets. Where constructs were identified which had not been measured in veterinary consultations, tools available in other healthcare fields were utilised. In addition, it was felt that because several validated instruments were available to measure certain consult constructs, it was important to validate the additional constructs through triangulation, in order to reach more robust conclusions.

The presence of numerous mismatches between vet and client has identified numerous avenues for further work in this area. Additionally, the implications of reporting the results of client satisfaction measures to the vet involved had not previously been fully considered in this thesis, or more broadly. The identification of poor performance by the vet may have the potential to cause them emotional distress. Certainly, this complex issue warrants further contemplation, in light of veterinary surgeon mental health and wellbeing. Finally, future research should also explore a more suitable method for assessing consultation decision-making, before performing the study on a larger scale.

7.5 Conclusion

This thesis has highlighted the importance of the consultation but also its complexity and variability. A definition for the ’good’ small animal consultation has been proposed, along with a pragmatic assessment method, suitable for use outside the academic setting. Furthermore, this thesis has highlighted numerous recurring findings, including mismatches in stakeholder

expectations, trust and satisfaction. It has also argued for a re-definition of shared decision-making and a reframing of consultation skills teaching, to place greater emphasis on decision-making.

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Press.

Appendices

Appendix 1: Personal reflexivity statement

I am a white, female veterinary surgeon who grew up in the North-East of England and attended a private school. I came to vet school as a mature student, following a bachelor's degree in Bioveterinary Science.

During my veterinary training at Nottingham vet school, there was a focus on the non-technical skills fundamental to veterinary medicine, such as professionalism and communication. In addition, I spent numerous weeks at one particular practice during my Extra Mural Studies, which practiced a relationship-centred and holistic approach to veterinary care. Both of these have had significant influences on my passion for the topic and for the profession.

Following graduation, I spent two years in a corporately-owned, first opinion small animal practice in the South East of England followed by a year's rotating small animal internship at the Royal Veterinary College. Upon completion of the internship, I spent nine months working at a very busy inner-city charity hospital in central London before applying for this PhD.

These three roles, alongside my pre-qualification experiences have provided me with a deeper insight into the many facets and different styles of veterinary practice, giving me a broader wealth of experience from which to draw. In addition, I believe that my clinical training helps to remain pragmatic and focussed on the application of the research in multiple working situations.

Whilst it is certainly possible that my clinical training could cause me to sympathise more with veterinary professionals than client participants, I am also a ‘pet parent’ to a very bonded hand-reared cat. Being unable to maintain even the slightest objectivity about my own pets, I have made numerous trips to the vets for various prophylactic and health-related reasons; I believe this gives me the ability to truly empathise with both participant groups.

When conducting the focus groups and SSIs, participants were given a potted history of my veterinary career (Appendix 3 - Information sheet for participants) but also that I was a pet owner. Whilst this may have affected the answers that they gave, I believe that the relaxed nature of a focus group, along with an ice-breaking introductory segment allowed rapport to be built between myself and the other participants, minimising potential bias as far as is possible.

Since beginning my PhD, I have continued to practice occasionally as a small animal vet, in a teaching capacity, at the School of Veterinary Medicine and Science, University of Nottingham. The teaching has primarily focussed upon supervising final year students providing preventative medical care at the “Vets in the Community” clinic and facilitating communications and consultations teaching as part of the Personal and Professional Skills modules, run throughout the undergraduate course. Again, this focus on teaching throughout my PhD studies has helped me to consider the practical applications of the research.

Appendix 2: Protocol for measuring the success of specific health problem consultations in cats and dogs: A Systematic Review

Background: The consultation is arguably the most crucial step in the veterinarian-client-patient relationship. However, the nature of the veterinary consultation is a complex one, with multiple stakeholders, time and often financial constraints. Identification and quantification of consultation 'success factors' currently recognised in veterinary medicine will form the foundation for improving the consultation and therefore patient outcome, compliance and client satisfaction. This systematic review aims to provide a thorough understanding of the current evidence base on factors that contribute to success in veterinary consultation.

Aims: The aim of this review is to identify existing published evidence that describes first-presentation, specific health problem consultations in cats and dogs in veterinary practice. A secondary aim is to describe and evaluate the quality of the existing peer-reviewed literature that evaluates factors affecting the 'success' of specific health problem consultations.

Objectives:

- Identify the published, peer-reviewed literature on specific health problem consultations
- Identify factors depicted as affecting the success of specific health problem consultations

- Critically appraise the quality of the available evidence base describing these success factors.

Definitions: For the purpose of this review, a specific health problem consultation is defined as follows: any consultation where the primary reason for presentation is due to an injury, disease or clinical signs currently affecting the animal. This excludes all consultations where the main reason for presentation is one of the following:

- Vaccination
- Parasite prevention
- Routine health checks (for example a new kitten or puppy check)
- Post-operative checks
- Behaviour consultations
- Nutrition consultations
- Weight checks

Inclusion and exclusion criteria

Criteria	**Inclusion**	**Exclusion**
Population	Specific health problem consultations performed by a veterinary surgeon, involving cats and/or dogs	Consultations not performed by a veterinary surgeon Preventive medicine consultations Post-operative checks Behaviour consultations Nutrition consultations Weight checks
Study Type	Peer-reviewed published research science	Narrative reviews, letters, expert opinion, case studies, guidelines without clear methods of how formed
Language	English language manuscripts	Non-English language manuscripts
Publication Type	Full study reported Published literature	Grey literature

		Abstracts (methods and results not available on request) CPD/CE notes
Availability	Able to obtain through UoN library or inter-library loan	Unable to obtain whole manuscript

Search Strategy:

Databases: Search performed on a set date.

- Medline In-Process & Non-Indexed Citations and Ovid MEDLINE: 1946 – Present
- CAB Abstracts (Ovid): 1910 - present

Search terms

CAB Abstracts (OVID) (1910-2016)

Species terms: dog.mp. OR dogs.mp. OR canine.mp. OR canines.mp. OR canis.mp. OR cat.mp. OR cats.mp. OR feline.mp. OR felines.mp. OR felis.mp. OR pet.mp. OR pets.mp. OR small animal$.mp. OR companion animal$.mp. OR exp dogs/ OR exp cats/ OR exp pets/ OR exp small animal practice/

AND

Consultation terms: consult$.mp. OR appointment$.mp. OR check-up$.mp. OR checkup$.mp. OR visit.mp. OR visits.mp. OR physical exam$.mp. OR clinical exam$.mp. OR communica$.mp. OR exp communication/

AND

Veterinary Subset: ve.ss

OVID MEDLINE In-Process and other non-indexed citations and OVID MEDLINE 1946 – present

Species terms: dog.mp. OR dogs.mp. OR canine.mp. OR canines.mp. OR canis.mp. OR cat.mp. OR cats.mp. OR feline.mp. OR felines.mp. OR felis.mp. OR pet.mp. OR pets.mp. OR small animal$.mp. OR companion animal$.mp. OR exp Dogs/ OR exp Cats/ OR exp Pets/

AND

Consultation terms: consult$.mp. OR appointment$.mp. OR check-up$.mp. OR checkup$.mp. OR visit.mp. OR visits.mp. OR physical exam$.mp. OR clinical exam$.mp. OR communica$.mp. OR exp "Referral and Consultation"/ OR exp Physical Examination/ OR exp Communication/

AND

Veterinary: vet$.mp. OR exp Veterinary Medicine/ OR exp Veterinarians/

<u>Search output sorting criteria:</u>

- Keyword searches to identify list of titles and abstracts that describe specific health problem consultations using exclusion criteria in the following order: Duplicates -> books -> generic -> full text not in English -> human medical literature -> not about cats/dogs -> not about consultations -> not about specific health consultations -> not primary research -> not peer reviewed
- Any titles or abstracts leading to ambiguity regarding inclusion to be discussed with supervisors
- Second author to assess a random sample of 10% to check for concordance

Quality assessment: Appropriate risk of bias and quality assessment tools for study types

Data extraction: Extract relevant outcomes measuring success of the health problem consultation in cats and/or dogs

Synthesis and reporting: PRISMA reporting guidelines

Dissemination: Publication in peer-reviewed journal

Appendix 3: School of Veterinary Medicine and Science Statement of Research Ethics - for data collection by questionnaire, interview or focus group

		Tick where appropriate
1.	I am aware of the relevant sections of the EU General Data Protection Regulation (GDPR) and the UK Data Protection Act 2018: https://www.nottingham.ac.uk/governance/records-and-information-management/gdpr-overview.aspx http://www.legislation.gov.uk/ukpga/2018/12/section/1/enacted	
2.	Data gathering activities involving schools and other organisations will be carried out only with the agreement of the head of school/organisation, or an authorised representative, and after adequate notice has been given.	
3.	The purpose and procedures of the research, and the potential benefits and costs of participating (e.g. the amount of their time involved), will be fully explained to prospective research participants at the outset.	
4.	My full identity will be revealed to potential participants.	
5.	Prospective participants will be informed that data collected will be treated in the strictest confidence and will only be reported in anonymised form, but that I will be forced to consider disclosure of certain information where there are strong grounds for believing that not doing so will result in harm to research participants or others, or (the continuation of) illegal activity.	
6.	All potential participants will be asked to give their explicit, *normally* written consent to participating in the research, and, where consent is given, separate copies of this will be retained by both researcher and participant.	
7.	In addition to the consent of the individuals concerned, the signed consent of a parent, guardian or 'responsible other' will be required to sanction the participation of minors (i.e. persons under 16 years of age) or those whose 'intellectual capability or other vulnerable circumstance may limit the extent to which they can be expected to understand or agree voluntarily to undertake their role.	
8.	Undue pressure will not be placed on individuals or institutions to participate in research activities.	
9.	The treatment of potential research participants will in no way be prejudiced if they choose not to participate in the project.	
10.	I will provide participants with my contact details, in order that they are able to make contact in relation to any aspect of the research, should they wish to do so	

11. Participants will be made aware of their options to withdraw from the project at the beginning of data collection/enrollment.	
12. Research will be carried out with regard for mutually convenient times and negotiated in a way that seeks to minimise disruption to schedules and burdens on participants.	
13. At all times during the conduct of the research I will behave in an appropriate, professional manner and take steps to ensure that neither myself nor research participants are placed at risk.	
14. The dignity and interests of research participants will be respected at all times, and steps will be taken to ensure that no harm will result from participating in the research	
15. The views of all participants in the research will be respected.	
16. Special efforts will be made to be sensitive to differences relating to age, culture, disability, race, sex, religion and sexual orientation, amongst research participants, when planning, conducting and reporting on the research.	
17. Data generated by the research (e.g. transcripts of research interviews) will be kept in a safe and secure location and will be used purely for the purposes of the research project (including dissemination of findings). No-one other than research colleagues or examiners will have access to any of the data collected.	
18. Research participants will have the right of access to any data kept on them. (Please note: If they have given information anonymously then this may not always be possible to retrieve.)	
19. All necessary steps will be taken to protect the privacy and ensure the anonymity and non-traceability of participants – e.g. by the use of pseudonyms, for both individual and institutional participants, in any written reports of the research and other forms of dissemination.	
20. Where possible, research participants will be provided with a summary of research findings and an opportunity for debriefing after taking part in the research.	

Appendix 4: Focus group information sheet and consent form for pet owners

Information Sheet
School of Veterinary Medicine and Science at the University of Nottingham

Project title:
Defining the "good" consultation: what does it look like and how do we measure this?

Who am I?

My name is Louise and I am a vet who graduated from Nottingham vet school. I worked in small animal practice for four years before coming back to start my PhD. When I was in practice, the thing I enjoyed most was consulting and getting to know my clients and their pets.

What is my research about?
I am attempting to define what a good veterinary consultation looks like. There are lots of factors that contribute to a consultation and I am trying to understand it from every viewpoint. To achieve this, I am interviewing cat and dog owners, like you, veterinary surgeons and veterinary practice owners. The interviews with pet owners will take place as focus groups with other pet owners.

We are interested in what aspects of the consult are most valued by veterinary clients. We are particularly interested in situations you have found most positive when you have attended the vets about your animal(s) and also what could have been done better at times where your experience was less positive.

What does the focus group entail?
The focus group will last about an hour and a half and I will ask lots of questions. There are no right or wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said but you must listen respectfully as others share their views. Keep in mind that I'm just as interested in negative comments as positive comments.

With participants' permission, interviews will be recorded to make information collection and transcription easier. The data we collect will be anonymized and then analysed to identify major themes. I will then use these to come up with a system to evaluate consultations. I intend to publish the results from the focus groups along with other parts of this project. The combined results will be used to create a framework for teaching veterinary consultations.

Participant's rights
You can decide to stop being a part of this research study at any time, without an explanation, up until the point of publication of results. University of Nottingham policy is to maintain the anonymity of all participants in research and your name will not appear in any publication connected to this research.

You will be identified by a number e.g. dog owner 1, cat owner 2. All information obtained is stored confidentially, so that only myself and my supervisors can access it. Information will be published in its raw form within my thesis or any publications connected to this research, but your name will not appear alongside any of your answers. You can refuse to answer or respond to any question that is asked.

How do I give consent?

You will be asked to sign a consent form before the focus group. It is important that you read and understand this. Please ask if there is anything that is not clear.

If you require any further information or you do not understand this information, please contact the researcher: louise.corah@nottingham.ac.uk or her supervisors liz.mossop@nottingham.ac.uk, kate.cobb@nottingham.ac.uk or Rachel.dean@nottingham.ac.uk

PARTICIPANT CONSENT FORM

Project title: *Defining the "good" consultation: what does it look like and how do we measure this?*

Researcher's name: *Louise Corah*

Supervisors names: *Liz Mossop, Kate Cobb and Rachel Dean*

- ☐ I have read the Participant Information Sheet and the nature and purpose of the research project has been explained to me. I understand and agree to take part.
- ☐ I understand the purpose of the research project and my involvement in it.
- ☐ I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future.
- ☐ I understand that while information gained during the study may be published, I will not be identified
- ☐ I understand that I will be audiotaped or videotaped during the research
- ☐ I understand that data will be stored at the University or in the possession of the researcher and will only be accessible to the researcher and supervisors.
- ☐ I understand that I may contact the researcher or supervisor if I require further information about the research, and that I may contact the Research Ethics Coordinator of the School of Veterinary Medicine and Science, University of Nottingham, if I wish to make a complaint relating to my involvement in the research.

Signed …… (Research participant)

Print name …… **Date** ……

Contact details

Researcher: *louise.corah@nottingham.ac.uk* Supervisors: *liz.mossop@nottingham.ac.uk*,

kate.cobb@nottingham.ac.uk, *rachel.dean@nottingham.ac.uk* School of Veterinary Medicine and

Science Research Ethics Coordinator: *david.haig@nottingham.ac.uk*

Appendix 5: Focus group information sheet and consent form for veterinary professionals

Information Sheet
School of Veterinary Medicine and Science at the University of Nottingham

Project title:
Defining the "good" consultation: what does it look like and how do we measure this?

Who am I?

My name is Louise and I am a vet who graduated from Nottingham vet school. I worked in small animal practice for four years before coming back to start my PhD. When I was in practice, the thing I enjoyed most was consulting and getting to know my clients and their pets.

What is my research about?
I am attempting to define what a good veterinary consultation looks like. As you know, there are lots of factors that contribute to a consultation and I am trying to understand it from every viewpoint. To achieve this, I am interviewing veterinary surgeons, pet owners and veterinary practice owners.

We are interested in what aspects of the consult you think are most important to get right. We are particularly interested in consults that you have found positive and also ones which have not gone as well.

What does the focus group entail?
The focus group will last about an hour and I will ask lots of questions. There are no right or wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said but you must listen respectfully as others share their views. Keep in mind that I'm just as interested in negative comments as positive comments.
With participants' permission, interviews will be recorded for ease of data collection and transcription. The data we collect will be anonymized and analysed to identify major themes. Results from this part of the study will be reported along with other parts of this project and used to create a framework for teaching veterinary consultations.

Participant's rights
You can decide to stop being a part of this research study at any time, without an explanation, up until the point of publication of results. I promise to keep all data anonymous and your name will not appear in any publication connected to this research. You will be identified by a number or a descriptor e.g. small animal vet 1, mixed practice vet 2. All raw data is stored confidentially, so that only myself and my supervisors can access it. Data will be published in its raw form within my thesis or any publications connected to this research, but your name will not appear alongside any of your answers. You can refuse to answer or respond to any question that is asked.

How do I give consent?
You will be asked to sign a consent form before the focus group. It is important that you read and understand this. Please ask if there is anything that is not clear.

If you require any further information or you do not understand this information, please contact the researcher: louise.corah@nottingham.ac.uk or her supervisors liz.mossop@nottingham.ac.uk, kate.cobb@nottingham.ac.uk or Rachel.dean@nottingham.ac.uk

PARTICIPANT CONSENT FORM
Project title: Defining the "good" consultation: what does it look like and how do we measure this?
Researcher's name: Louise Corah
Supervisors names: Liz Mossop, Kate Cobb and Rachel Dean

- ☐ I have read the Participant Information Sheet and the nature and purpose of the research project has been explained to me. I understand and agree to take part.
- ☐ I understand the purpose of the research project and my involvement in it.
- ☐ I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future.
- ☐ I understand that while information gained during the study may be published, I will not be identified
- ☐ I understand that I will be audiotaped or videotaped during the research
- ☐ I understand that data will be stored at the University or in the possession of the researcher and will only be accessible to the researcher and supervisors.
- ☐ I understand that I may contact the researcher or supervisor if I require further information about the research, and that I may contact the Research Ethics Coordinator of the School of Veterinary Medicine and Science, University of Nottingham, if I wish to make a complaint relating to my involvement in the research.

Signed …… (Research participant)

Print name …… **Date** ……

Contact details
Researcher: louise.corah@nottingham.ac.uk Supervisors: liz.mossop@nottingham.ac.uk, kate.cobb@nottingham.ac.uk, rachel.dean@nottingham.ac.uk
School of Veterinary Medicine and Science Research Ethics Coordinator: david.haig@nottingham.ac.uk

Appendix 6: Focus group demographic questionnaire for pet owners

Thank you for taking the time to fill out this short questionnaire. The data is being gathered for demographic analysis and to ensure that we have spoken to a representative group of individuals. Answers are anonymous and will not be linked to the answers you give during the interview.

1. What is your gender?
   ☐ Male ☐ Female
   ☐ Non-binary/third gender ☐ Prefer not to say

2. What is your age?
   ☐ 18 – 35 ☐ 36 – 59 ☐ ≥ 60
   ☐ Prefer not to say

3. How would you describe your ethnicity? (UK Census 2011 categories)
   ☐ White ☐ Asian/ Asian British
   ☐ Black/ Black British ☐ Mixed/ Multiple ☐ Other

4. Do you have children (under 16 years old) living in your household?
   ☐ Yes ☐ No

5. How would you describe the area that you live?
   ☐ Rural ☐ Suburban
   ☐ Urban ☐ Other (please specify)
   ……

6. What type of pet(s) do you have?
   ☐ Cat(s) ☐ Dog (s)
   ☐ Cat(s) and Dog(s) ☐ Other (please specify)
   ……

7. Is this the first pet(s) you have personally owned as an adult?
   ☐ Yes ☐ No

8. Is your pet insured?
   ☐ Yes ☐ No ☐ Unsure/Don't remember

9. What is the role of your animal?
   ☐ Pet ☐ Working ☐ Other (please specify)

10. What is the name of the practice(s) that you attend with your pet(s)?

……

Appendix 7: Focus group demographic questionnaire for veterinary professionals

Thank you for taking the time to fill out this short questionnaire. The data is being gathered for demographic analysis and to ensure that we have spoken to a representative group of individuals. Answers are anonymous and will not be linked to the answers you give during the interview.

1. What is your gender?
   ☐ Male ☐ Female
   ☐ Non-binary/third gender ☐ Prefer not to say

2. What is your age? ……

3. How much time has passed since your graduation from vet school? ……

4. What is your place of undergraduate qualification? ……

5. Did you receive consultation and/or communication skills training at university?
   ☐ Yes ☐ No ☐ Unsure/Don't remember

6. Please describe what this training consisted of ……

7. Have you undergone consultation and/or communication skills training following graduation?
   ☐ Yes ☐ No ☐ Unsure/Don't remember

8. Please describe what this training consisted of ……

9. Have you gained any further veterinary qualifications?
   ☐ No, no further qualifications ☐ Yes, certificate/diploma
   ☐ Yes, other (please specify) …….

10. What type of practice are you based in?
    ☐ Small animal practice ☐ Mixed animal practice ☐ Other (please specify)

11. What is your role in practice?
    ☐ Assistant ☐ Partner/Clinical Director ☐ Other (please specify)

12. What is the ownership of your practice?
    ☐ Corporate ☐ Independent ☐ Charity
    ☐ Other (please specify) ……

13. How would you describe the location of your practice?
    ☐ Rural ☐ Suburban ☐ Urban
    ☐ Other (please specify) ……

Appendix 8: Focus group discussion guide

[Participants seated in a circle with focus group facilitator. Two Dictaphones placed in the centre of the circle]

Introduction:

"Hello and welcome to the session. Thanks for taking the time to come and join me to talk about your experiences and share your opinions. My name is Louise Corah, and I am a vet doing a PhD at Nottingham vet school. I am interested in finding out about what you think makes a good consultation. I would like to know what you like and also what you don't like.

I want to make sure that everyone has an equal chance of contributing. I apologise in advance if I have to ask some of you to hold back so that I get to hear what some of the quieter group members have to say.

There are no right or wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said but you must listen respectfully as others share their views. Keep in mind that I'm just as interested in negative comments as positive comments.

You've probably noticed the microphone. I'm tape recording the session because I don't want to miss any of your comments. People often say very helpful things in these discussions, and I can't write fast enough to get them all down. We will be on a first name basis, and I won't use any names in my reports. I would also ask that you don't talk to others about what we discuss in this group to ensure complete confidentiality.

If you are interested in receiving a summary report of the study once complete, please leave an email address.

Just quickly - Rules for mobile phones: I'd like to ask that you turn off your phones. If you can't and if you must respond to a call, please duck out of the room as quietly as possible and re-join us as

quickly as you can. The discussion should take around 1.5 hours and in order to keep to time I may need to move us on to the next topic."

General introductory question: "Please introduce yourself and tell me a little bit about yourself"

Modified nominal Group Technique:

[participants each have a pen and a small sticky note]

"Please could you all write down three things that you think make a good consultation? And three things that you think make a bad consultation?"

[participants given approximately five minutes to write down their individual answers to the above questions, followed by group discussion]

Follow up question:

"I'd like you to think about THE BEST consultation you have ever experienced. One where the animal had a specific health problem or was unwell, such as a sore foot or an itchy ear. If it helps, you could describe the consult from start to finish"

Rounding up question:

"In one sentence, can you define a good consultation for me?"

Closing question:

"Does anybody have anything else that they would like to add or that they think we have missed today?"

Appendix 9: Consult scoring timings and demographics data collection tool

Date (DD/MM/YY)	Practice	Consult ID	Vet	Year of Qualification

Appointment time		**Arrival time**	
Taken into consult at		**Waiting time**	
Length of consult			

Permission for follow up?	**Yes ☐ No ☐**
Contact telephone number	
Contact email	
Medication prescribed (Name of drug, number of tablets, dose)	

1. Were multiple animals presented? (Complete a separate questionnaire for each animal) Yes ☐ No ☐

2. Select the best description of the type of case from the following options:

☐ First Consult ☐ Recheck ☐ Elective Euth ☐ Recurrent ☐ 2nd Op

☐ Ongoing: Acute ☐ Ongoing: Chronic ☐ Monitoring ☐ Admit/discharge ☐ Other

☐ Prev Med

3. Which species was present during the consult?

☐ Dog ☐ Cat ☐ Rabbit ☐ Ferret

☐ Rodent ☐ Bird ☐ Reptile ☐ Other

4. What was the animal's breed?

5. What was the animal's age?

6. What was the animals sex including neutering status?

☐ Male Neutered ☐ Male Entire ☐ Male Unknown

☐ Female Neutered ☐ Female Entire ☐ Female Unknown

7. Was a clinical exam performed? ☐ Yes: full exam ☐ Yes: focussed exam ☐ No

	Problem 1	Problem 2	Problem 3	Problem 4
Problem summary/clinical signs				
Diagnosis	☐ Open ☐ Presumed	o Open ☐ Presumed	o Open ☐ Presumed	o Open ☐ Presumed

	o Working ☐ Definitive ☐ Prev Dx ☐ N/A	o Working ☐ Definitive ☐ Prev Dx ☐ N/A	o Working ☐ Definitive ☐ Prev Dx ☐ N/A	o Working ☐ Definitive ☐ Prev Dx ☐ N/A
Outcome	☐ Nothing ☐ Work Up ☐ Euth ☐ Refer ☐ Manage ☐ Ther. Tx ☐ Prop. Tx ☐ Other	☐ Nothing ☐ Work Up ☐ Euth ☐ Refer ☐ Manage ☐ Ther. Tx ☐ Prop. Tx ☐ Other	☐ Nothing ☐ Work Up ☐ Euth ☐ Refer ☐ Manage ☐ Ther. Tx ☐ Prop. Tx ☐ Other	☐ Nothing ☐ Work Up ☐ Euth ☐ Refer ☐ Manage ☐ Ther. Tx ☐ Prop. Tx ☐ Other
Require compliance follow up?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

Appendix 10: Consult scoring client post-consult questionnaire

The following survey should take approximately 5 minutes to complete. You may choose to leave any question that you do not wish to answer blank. All answers are anonymised and you have the right to withdraw from this research at any point up until publication. For more information, please contact the researcher (louise.corah@nottingham.ac.uk) or her supervisors (liz.mossop@nottingham.ac.uk, kate.cobb@nottingham.ac.uk or rachel.dean@nottingham.ac.uk)

PLEASE NOTE THAT YOUR RESPONSES WILL REMAIN PRIVATE AND ANONYMOUS – the vet will not be able to see your responses or link them to you.

What is the unique consult number (This can be found on your information sheet, please ask if you are unsure)

From your visit today, how would you rate the following 15 aspects of the consultation:

	Poor	Fair	Good	Very good	Excellent	Could not be better	Not applicable
The amount of attention the vet gave your pet							
How well the vet understood the reason for your visit							
Your sense of the vet's confidence interacting with you and your pet							
How well the vet involved you in the entire appointment							
The vet's examination of your pet							
How well the vet explained treatments and procedures							
How well you understood the costs today							
How well the vet involved you in decisions							
The vet's discussion of options with you							

	Poor	Fair	Good	Very good	Excellent	Could not be better	Not applicable
The vet's discussion of the cost with you							
The interest the vet expressed in your opinion							
The amount of information you received from the vet							
How well the vet addressed all of your concerns							
The vet's recognition of the role this pet has in your life							
The amount of time the vet spent with you and your pet							

How would you rate your satisfaction with the consultation today? (Please circle the smiley face which best matches your experience)



Is there anything else that you would like to share with us about your experience during the consult today?

On the 5-point scale, please respond to the following 11 items regarding your perceptions of the vet you have just seen to the best of your ability

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The vet put me at ease during the consultation					
The vet behaved in a professional manner					
The vet did not talk down to me or above my head					
The vet was kind and accommodating towards me, but firm when required					
The vet was honest with me if they did not know the answer to a question, or were uncertain about their knowledge					
I believe that the vet would readily seek the advice of others if they had doubts about their diagnosis or recommendations for treatment					
The vet demonstrated their knowledge about my animal's condition by describing the diagnosis completely and precisely					
I trust this vet					
Based on this consult, I would see this vet again for my animal's care					
I trusted that the vet had carefully considered my and their concerns regarding my animal					
I would recommend this vet to others for their veterinary needs					

If you are interested in receiving a summary of the results from this study, please enter your email address in the box below. Please note that your contact details will be kept separately and will not be linked to the answers that you give.

Appendix 11: Consult scoring vet post-consult questionnaire

The following survey should take approximately 5 minutes to complete. You may choose to leave any question that you do not wish to answer blank. All answers are anonymised and you have the right to withdraw from this research at any point up until publication. For more information, please contact the researcher (louise.corah@nottingham.ac.uk) or her supervisors (liz.mossop@nottingham.ac.uk, kate.cobb@nottingham.ac.uk or rachel.dean@nottingham.ac.uk)

What is the unique consult number (Please ask if you are unsure)

Please answer the following questions based on THE CONSULT YOU HAVE JUST SEEN

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
This was a very satisfying visit for me					
I got all the detail I needed regarding the patient's history					
This client constantly complains					
This client is very personable					
I would have liked to spend more time with this client					

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I didn't get all the detail I wanted on the patient's problem and signs					
I established effective rapport with this client					
My time was NOT well spent in the visit					
This client trusts me a great deal					
I was NOT effective in influencing this client's behaviour					

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I felt adequately trained and confident in treating this patient					
I don't think this visit was necessary					
This client understood my explanations of the medical problem and treatment					
This patient is pleasant to work with					
This visit was boring and unchallenging					

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I didn't conduct as detailed a physical exam as I would like					
There are aspects of my relationship to this client that I would like to change					
I could NOT understand all that this client wanted to tell me					
This client demands a lot of personal attention					
I spent more time with this client than I would have liked					

How would you rate your satisfaction with the consultation today? (Please circle the smiley face which best matches your experience)



Is there anything else that you would like to share with us about your experience during the consult today?

Appendix 12: Consult scoring client information sheet and consent form

Information Sheet
School of Veterinary Medicine and Science at the University of Nottingham

Project title:
Defining the "good" consultation: what does it look like and how do we measure this?

Who am I?

My name is Louise and I am a vet who graduated from Nottingham vet school. I worked in small animal practice for four years before coming back to start my PhD. When I was in practice, the thing I enjoyed most was consulting and getting to know my clients and their pets.

What is my research about?
I am attempting to define what a good veterinary consultation looks like. There are lots of factors that contribute to a consultation and I am trying to understand it from every viewpoint. To achieve this, I am video recording actual consultations and analysing them to look at the communication, decision making, consult length and waiting time. After the consult I will be using questionnaires to find out about the experience from the perspective of both the vet and the client.

What does participation entail?
With all participants' permission, consults will be video recorded and both you and the client will be asked to complete a questionnaire following the consultation. In addition, if the pet is prescribed medication and the client agrees to participate, the client will be contacted by telephone 7 -14 days after the consultation to answer a second, short questionnaire.

Results from this part of the study will be reported along with other parts of this project and used to create a framework for teaching veterinary consultations.

Participant's rights
You can decide to stop being a part of this research study at any time, without an explanation, up until the point of publication of results. All data will be kept anonymous and your name will not appear in any publication connected to this research. You will be identified by a number or a descriptor e.g. vet 1, client 2. All raw data is stored confidentially, so that only myself, my supervisors and authorised researchers at the Centre for Evidence based Veterinary Medicine can access it. Data will be published in its raw form within my thesis or any publications connected to this research, but your name will not appear alongside any of the data.

How do I give consent?

You will be asked to sign a consent form before any video recording begins. It is important that you read and understand this. Please ask if there is anything that is not clear.

If you require any further information or you do not understand this information, please contact the researcher: louise.corah@nottingham.ac.uk or her supervisors liz.mossop@nottingham.ac.uk, kate.cobb@nottingham.ac.uk or Rachel.dean@nottingham.ac.uk

PARTICIPANT CONSENT FORM

Project title: *Defining the "good" consultation: what does it look like and how do we measure this?*

Researcher's name: *Louise Corah*

Supervisors names: *Liz Mossop, Kate Cobb and Rachel Dean*

- ☐ I have read the Participant Information Sheet and the nature and purpose of the research project has been explained to me. I understand and agree to take part.
- ☐ I understand the purpose of the research project and my involvement in it.
- ☐ I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future.
- ☐ I understand that while information gained during the study may be published, I will not be identified
- ☐ I understand that I will be videotaped during the research
- ☐ I understand that data will be stored at the University or in the possession of the researcher and will only be accessible to the researcher, her supervisors and authorised members of the Centre for Evidence-based Veterinary Medicine.
- ☐ I understand that I may contact the researcher or supervisor if I require further information about the research, and that I may contact the Research Ethics Coordinator of the School of Veterinary Medicine and Science, University of Nottingham, if I wish to make a complaint relating to my involvement in the research.

Signed …… (Research participant)

Print name …… **Date** ……

Contact details

Researcher: *louise.corah@nottingham.ac.uk*

Supervisors: *liz.mossop@nottingham.ac.uk*, *kate.cobb@nottingham.ac.uk*, *rachel.dean@nottingham.ac.uk*

School of Veterinary Medicine and Science Research Ethics Coordinator: *david.haig@nottingham.ac.uk*

Appendix 13: Consult scoring vet information sheet and consent form

Information Sheet
School of Veterinary Medicine and Science at the University of Nottingham

Project title:
Defining the "good" consultation: what does it look like and how do we measure this?

Who am I?

My name is Louise and I am a vet who graduated from Nottingham vet school. I worked in small animal practice for four years before coming back to start my PhD. When I was in practice, the thing I enjoyed most was consulting and getting to know my clients and their pets.

What is my research about?
I am attempting to define what a good veterinary consultation looks like. There are lots of factors that contribute to a consultation and I am trying to understand it from every viewpoint. To achieve this, I am video recording actual consultations and analysing them to look at the communication, decision making, consult length and waiting time. After the consult I will be using questionnaires to find out about the experience from the perspective of both the vet and the client.

What does participation entail?
With all participants' permission, consults will be video recorded and both you and the vet will be asked to complete a questionnaire following the consultation. In addition, if your pet is prescribed medication, and you agree to participate, you will be contacted by telephone 7 -14 days after the consultation to answer a second, short questionnaire.

Results from this part of the study will be reported along with other parts of this project and used to create a framework for teaching veterinary consultations.

Participant's rights
You can decide to stop being a part of this research study at any time, without an explanation, up until the point of publication of results. I promise to keep all data anonymous and your name will not appear in any publication connected to this research. You will be identified by a number or a descriptor e.g. vet 1, client 2. All raw data is stored confidentially, so that only myself, my supervisors and authorised researchers at the Centre for Evidence based Veterinary Medicine can access it. Data will be published in its raw form within my thesis or any publications connected to this research, but your name will not appear alongside any of the data.

How do I give consent?

You will be asked to sign a consent form before any video recording begins. It is important that you read and understand this. Please ask if there is anything that is not clear.

If you require any further information or you do not understand this information, please contact the researcher: louise.corah@nottingham.ac.uk or her supervisors liz.mossop@nottingham.ac.uk, kate.cobb@nottingham.ac.uk or Rachel.dean@nottingham.ac.uk

PARTICIPANT CONSENT FORM

Project title: *Defining the "good" consultation: what does it look like and how do we measure this?*

Researcher's name: *Louise Corah*

Supervisors names: *Liz Mossop, Kate Cobb and Rachel Dean*

- ☐ I have read the Participant Information Sheet and the nature and purpose of the research project has been explained to me. I understand and agree to take part.
- ☐ I understand the purpose of the research project and my involvement in it.
- ☐ I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future.
- ☐ I understand that while information gained during the study may be published, I will not be identified
- ☐ I understand that I will be videotaped during the research
- ☐ I understand that data will be stored at the University or in the possession of the researcher and will only be accessible to the researcher, her supervisors and authorised members of the Centre for Evidence-based Veterinary Medicine.
- ☐ I understand that I may contact the researcher or supervisor if I require further information about the research, and that I may contact the Research Ethics Coordinator of the School of Veterinary Medicine and Science, University of Nottingham, if I wish to make a complaint relating to my involvement in the research.

Signed …… (Research participant)

Print name …… **Date** ……

Contact details

Researcher: *louise.corah@nottingham.ac.uk*

Supervisors: *liz.mossop@nottingham.ac.uk*, *kate.cobb@nottingham.ac.uk*, *rachel.dean@nottingham.ac.uk*

School of Veterinary Medicine and Science Research Ethics Coordinator: *david.haig@nottingham.ac.uk*