Bournemouth University

Met or Matched Expectations:
What Accounts for a Successful Back Pain Consultation in Primary Care?

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**A thesis submitted in partial fulfilment of the requirements of
Bournemouth University for the degree of Doctor of Philosophy**

June 2011

Bournemouth University

Abstract

Background: Back pain is a common disorder, affecting up to 2 in 3 of the adult population, with the general practitioners (GPs) being the first point of contact for help. Bio-psychosocial management of back pain has been shown to be problematic. Meeting patients' expectations is alleged to play a vital role in concordance, adherence and satisfaction with the given treatment; a more potent aspect, however, could be a state of matched patient-GP expectations, which could have an influential effect on the process and outcome of the medical consultation. This aspect, however, has not been fully investigated in the literature and further research is needed to discern the potential importance of this matching on different aspects of the consultation.

Methods: The main aim of the study was to investigate the matching of patient-GP expectations related to the back pain consultation in primary care by means of (1) developing a structured questionnaire that can measure this matching; (2) using the tool to measure the matching of patient-GP expectations; and (3) exploring the perceived importance of such matched expectations on different aspects of the consultation. Using a mixed methods sequential nested design, 11 GPs and 57 back pain patients (from 11 general practices in the South of England) completed the Expectations Questionnaire (EQ) that measured the matching of their expectations. Telephone interviews were then used for exploring the perceived importance of this matching. The study tested the hypothesis that the matching of patients' and GPs' expectations was perceived as an important attribute for a successful back pain consultation in primary care, from the patients' and GPs' perspectives.

Results: The study showed that the EQ can be used as a valid and reliable tool for measuring the matching of patient-GP expectations. The results showed that patients and GPs had mismatched expectations regarding one third of the EQ items. These were mainly related to the psychosocial aspect of the management. The data suggested a trend within the back pain consultations, where patients were less likely to express their expectations and the GPs were less likely to enquire about any unmet expectations at the end of the visit, which could render many expectations unaddressed and unmet. Thematic data analysis revealed several emerging themes with regard to the importance of matched expectations, namely, enhanced communication, trust, empathy, satisfaction and adherence, and have identified different or lack of agendas, time, caseload, cultural and language variations and continuity of care as possible barriers to this matching.

Conclusion: The study revealed several convergences, but also identified a significant mismatch between patients' and GPs' expectations. Matched expectations were perceived as a significant indicator of the quality of the back pain consultation. Considering the many challenges and difficulties in managing back pain in general practice, a state of matched patient-GP expectations has the potential for improving the overall consultation experience, in terms of both the process and the outcome.

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> *... Knowledge must continually be renewed by ceaseless effort, if it is not to be lost. It resembles a statue of marble which stands in the desert and is continually threatened with burial by the shifting sand. The hands of service must ever be at work, in order that the marble continue to lastingly shine in the sun. To these serving hands mine shall also belong.*
>
> *(Albert Einstein, On Education, 1950)*

Acknowledgement

Georgy EE

2010

Dedication

To my dearest departed dad,
My dearest wife Marian, and lovely
children Yousef and Lily,
For all your love & continuous support

Declaration of Originality

"I hereby declare that this research study is entirely my own work other than the counsel of my supervisors, and that it has not been submitted for any academic award, or part thereof, at this or any other educational establishment"

Signed:

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Chapter I
Introduction

1.1 Context and background

The recent national report titled 'High quality care for all' highlighted key messages for improving the quality of the National Health Service (NHS), mainly reinforcing a health care service that gives both the patients and the public more information and choice, works in partnership and has quality of care at its heart; quality that is clinically effective, personal and safe (Darzi, 2008). The Picker Institute Europe, which is the UK's leading organisation in measuring patients' experiences of the health care services, supports such statements and adds that quality has to be viewed in terms of what matters to patients, and has to be linked with improving patients' journeys within the health care system (Woods, 2009). The Darzi report (2008) goes on to stress the need to continue the NHS journey of improvement and move from a focus on increasing the quantity of care to improving the quality of care, especially in light of the anticipated changes facing the society and health care systems around the world in the 21st century, particularly, patients' rising expectations. As can be inferred, there is growing acceptance of the importance of considering patients' expectations and preferences in developing health care management strategies (Skelton et al., 1996; Darzi, 2008); but the question is whether this would be sufficient for improving the quality of health care.

Affecting up to 2 in 3 of the adult population during the course of a year, back pain is a very common disorder, with an estimated fifth of the patients consulting their doctor about their condition (Walker, 2000; Savigny et al., 2009). Non-specific back pain is defined as tension, soreness and/or stiffness in the lower back region attributed to dysfunction of joints, discs or connective tissues (Savigny et al., 2009). The outlook for patients with back pain is generally excellent with 90% of the patients recovering within 3 months (Croft et al., 1998; Andersson, 1999); however, for individuals who do not recover within this time, the recovery process is slow and their demand on the health care system is large and costly (Andersson, 1999). Although most back pain patients adopt self-management strategies, back pain is a leading reason for hospitalisation and other care service utilisation (Maniadakis and Gray, 2000), and is cited as one of the most common reasons for consulting a GP (Malmivaara et al., 1995).

The essence of back pain management in primary care is the consultation, which is often viewed as a process of negotiation between the patient and doctor. Therefore, it would be more appropriate and sensible to look at quality from both perspectives, patients' and doctors'. All recent national reports, previous research and guidelines failed to acknowledge such a complex relationship between patients' and GPs' expectations, and have mostly overlooked or undervalued the importance of GPs' expectations and preferences (Georgy et al., 2009), despite its suggested influential effect on the consultation outcome (Nordin et al., 1998).

From a policy perspective, it is important that patients' as well as GPs' expectations are recognised, understood, and optimised in a way that promotes maximum mutual benefit for patients and GPs. Patient-GP agreement has been hypothesised to be an important goal of the medical encounter (Staiger et al., 2005). These aspects, however, are not fully understood and further research is needed to discern the influence of matched patient-GP expectations on the quality, process and outcome of the health care service, i.e., the consultation. Understanding patients' and GPs' expectations could improve the clinical health care process and quality improvement research. Yet, several barriers interfere with optimising expectations in back pain primary care and the research in this area is still relatively sparse. The importance of understanding these aspects prompted the need for a study to explore patients' and GPs' back pain-specific expectations and investigate their matching.

1.2 Research questions
1.2.1 Development of the research questions

The current study built its basis and foundation on a larger project that focused on exploring better approaches for improving back pain management in the community (Appendix 1). The LIMBIC (learning to improve management of back pain in the community) is a three-year quality improvement project that involved inter-professional teams (patient representatives, GPs, clinical and non-clinical practice staff) from nine primary care practices in the South of England. The LIMBIC project attempted to encourage collaboration between patients and professionals for improving the management of back pain in primary care using quality improvement methodology and evidence-based knowledge for the management of back pain. Action learning within teams was used to discuss and develop improvement projects throughout a series of eight half day collaborative learning workshops. Each workshop involved a pre-workshop one-hour patient representatives' focus group discussion that was used to

feedback to the main session, as well as to capture the patients' perspective as reflected in their stories. This was followed by a three-hour session that involved inter-professional collaborative learning activities involving patients, GPs and other clinical and non-clinical staff to learn about different topics including communication, expectations, improvement methodology and teaching specific to back pain. Support was provided for practice-based improvement work between these workshops, as teams were helped to use a continuous quality improvement approach to plan and implement small scale, rapid cycle changes in the services they offered, with reflection on the effects of these.

Acting as a member of the project steering group provided the opportunity to spot some of the rising issues around back pain management in primary care from the patients' and GPs' perspectives and identify areas that might need further investigation. A lack of matching of patients' and GPs' expectations was noted during the LIMBIC workshops. Exploring patients' stories and data from the patient representatives' focus group discussions revealed an important common theme for all patients, which was a perception of mismatched patient-GP expectations. Patients made a very clear message to GPs saying "Stop trying to cure us and listen to us". Patients stressed that they do not expect a magical cure; they want to be treated as a whole person; they want the professionals to see the person and not the pain; and finally, they want honesty about what's realistic. Further discussion with patients and GPs throughout the workshops confirmed the issue with regard to a perceived state of unmatched patient-GP expectations in relation to various aspects of the consultation. The issue was further consolidated through further discussion with professional experts and researchers working within the areas of health care quality improvement, communication and consultation skills. This prompted the need for a literature review to investigate back pain patients' and GPs' expectations and explore the potential for a positive impact of matched expectations on the consultation.

A summary of the reviewed literature on patients' and GPs' expectations was prepared and presented on one of the LIMBIC workshops. Discussions with patients, GPs and steering group members after the presentation confirmed the findings of the literature review of what seemed to be a mismatch of patients' and GPs' expectations. While the main purpose of the study was to explore the matching of patients' and GPs' expectations, reviewing the literature revealed a lack of valid measurement tools for such an aspect, which caused the study purpose to shift in a way to focus initially on

developing a valid measurement tool that can be used to explore the matching of expectations. As outlined in Figure 1, the research questions were refined and altered several times to reflect and respond to emerging problems throughout the study. Patients and GPs participating in the LIMBIC project played a crucial role in identifying the current research problem, establishing the research questions and the need and justification of the study, as well as developing and validating the research study measurement tool as shown in Chapter 4 of this thesis (page 56).

1.2.2 Research Questions

The current study attempted to answer the following research questions:

1. What are the relevant items to be included in developing a valid measurement tool for measuring patients' and GPs' back pain-specific expectations?

2. To what extent are back pain patients' and their GPs' expectations matched?

3. What is the perceived importance of a state of matched patient-GP expectations in relation to different aspects of the consultation from the patients' and GPs' perspectives?

1.3 Study aim and objectives

The main aim of the study was to investigate the matching of patients' and GPs' expectations related to back pain consultation in primary care. In order to achieve this aim, the study had three main objectives:

(1) To identify patients' and GPs' back pain-specific expectations and investigate the feasibility of using this range of expectations to develop a structured questionnaire that can measure the matching of patient-GP expectations.

(2) To investigate the matching of patients' and GPs' expectations related to the back pain consultation in primary care.

(3) To explore the perceived importance of matched expectations for patients and GPs in relation to different aspects of the consultation.

These objectives were identified following an integrative literature review (ILR) encompassing relevant literature on patients' and GPs' expectations related to back pain consultations in primary care. The ILR is a distinctive form of research that generates new knowledge about the topic by means of reviewing, criticising, and synthesising representative literature in an integrated way (Torraco, 2005). The ILR provided a

comprehensive overview of patients' and GPs' expectations, which, alongside the findings from the LIMBIC discussions, informed the development of a conceptual model that provided the foundation and basis for the hypothesis of the current study in terms of Met versus Matched expectations. Following on from this, the study adopted a mixed methods approach, where the matching of patient-GP expectations was investigated by means of the newly designed Expectations Questionnaire (EQ), while a qualitative approach, using telephone interviews, was used to explore the perceived importance of matched expectations and its potential impact on back pain consultations. The key argument of the study, based on the proposed "Met-Matched" model, is that a state of matched patient-GP expectations might potentially lead to better consultation for back pain in primary care, in terms of communication, adherence, satisfaction and concordance, provided that these expectations are justified, appropriate and in agreement with guidelines and clinical evidence. The study tested the hypothesis that the matching of patients' and GPs' expectations was perceived as an important attribute for a successful back pain consultation, from the patients' and GPs' perspectives.

1.4 Outline of the thesis

This thesis has seven chapters including this 'Introduction' chapter. Chapter 2 contains a review of the relevant literature on health expectations as well as back pain patients' and GPs' specific expectations of the consultation. This was carried out to identify gaps in the literature and to provide a context and justification for the research presented in this thesis. Chapter 3 describes the development of a conceptual model for the relationship between patients' and GPs' expectations and relates it to previous theories in the literature. Chapters 4 discusses the methodological approach adopted in the study and states the reasons for selecting this specific approach, as well as reports the research methods (research design, selection of subjects, data collection and analysis methods, and ethical considerations), and most importantly, discusses the development, piloting and validity testing of the newly designed EQ. Chapter 5 provides a detailed description of the findings of the mixed methods approach used for the main study to investigate the matching of patients' and GPs' expectations and to explore the perceived importance of this matching in relation to different aspects of the consultation. Chapter 6 presents the discussion of these findings, the study limitations, and the implications of the findings for practice, research and education. Finally, Chapter 7 pulls everything together in a brief summary, conclusion and recommendations for future research.

Figure 1 Development of the research questions and study objectives

(a) BP-Back pain, ^(b) QoL-Quality of life

Figure 1 Development of the research questions and study objectives

[a] BP-Back pain, [b] QoL-Quality of life
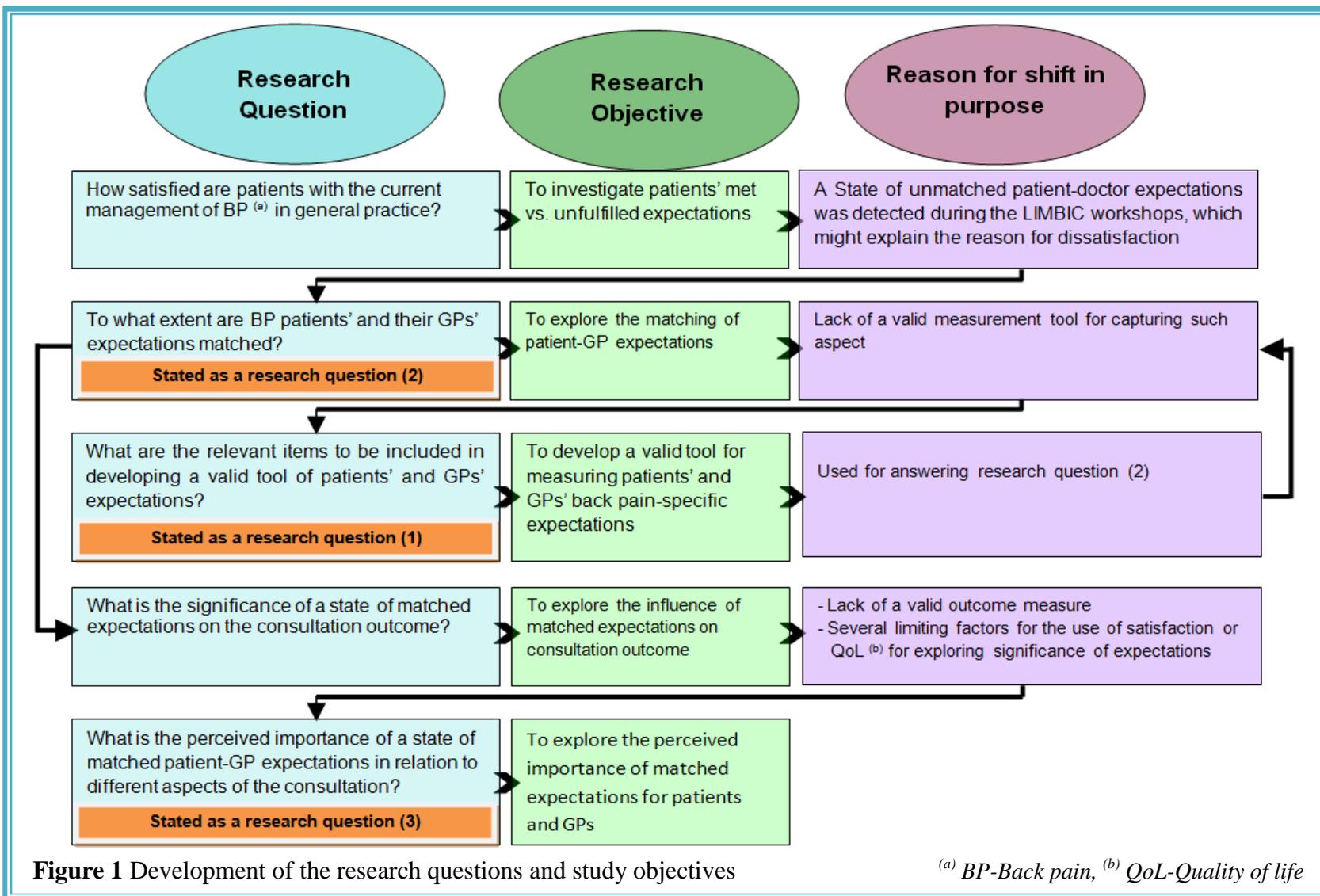
Chapter II
Literature Review

Introduction

This chapter presents the literature pertaining to health care expectations, with specific reference to back pain-specific expectations. The chapter is divided into two parts. Part one discusses different definitions and theories relevant to expectations, different measurement approaches, an outline of the general literature relating to patients' and GPs' expectations in primary care, as well as a brief summary of possible reasons for unmet expectations. Part two presents the findings of an integrative review of the literature pertaining to patients' and GPs' back pain-specific expectations. The chapter is then concluded by critical analysis of the literature findings and identification of gaps.

2.1 Healthcare Expectations:
Theoretical and general literature review

Patient-GP agreement is of paramount importance and has the potential to affect the consultation outcome in various ways. Reviewing the literature reveals that studies focusing on the matching of patients' and GPs' expectations are scarce and the effect of patient-GP agreement is not well established in the literature (Staiger et al., 2005), which prompted the need for a structured critical analysis of the relevant literature in the field of patients' and GPs' expectations. This section, which sets the stage for the integrative literature review in the subsequent section, discusses different definitions and concepts of expectations, which are many and variable, with every study adopting a different meaning and definition. The chapter presents the different terms and definitions used in previous studies in an attempt to reach a consensus about a concise standardised definition. Based on the literature review findings, a simplified overview of the concept is presented and a well-defined meaning of 'expectations' is suggested. An important further distinction is made between three important terms that are frequently used interchangeably in the literature, which are expectations, desires, and requests; this distinction is an essential prerequisite for better understanding of the research findings of studies in this field. Subsequently, a brief summary of previous conceptual theories that explained the formation and development of expectations, as well as measurement approaches and tools used to measure this dimension are discussed. An overview of the range of patients' and GPs' expectations in general, as

well as possible reasons for unmet expectations, is presented in an attempt to understand whether a state of matched patient-GP expectations would have an impact on different aspects of the consultation. For the purpose of this study, a state of "matched patient-GP expectations" is defined as patient-GP agreement about different interventions, services or actions that are likely to happen during the consultation.

2.1.1 Expectations: definition and concept

Reviewing the literature reveals that expectations are defined and conceptualised in various ways (Thompson and Sunol, 1995). Studies, which have considered the nature of expectations, adopted different meanings when exploring expectations. Broadly speaking, in terms of health services, expectations are formulated by patients about services they think they are to receive (Thompson and Sunol, 1995). Uhlmann et al. (1984) defined expectations as anticipation that given events are likely to occur during or as a result of service. Kravitz et al. (1996) stated that expectations are anticipation or desires that act as an indicator of the standard of care expected. Similarly, Zemencuk et al. (1998) defined expectations as the patients' perceptions of the likelihood of receiving a given element of care.

Some reported two types of expectations: value and probability (Kravitz, 1996). While probability expectations represent the patient anticipation about the likelihood of an event; value expectations are expressions of what the patient wants and thus assume a value element (Kravitz, 1996; Staniszewska, 1999). Others reported four different types of expectations: ideal; expected; minimum tolerable; and deserved (Miller, 1977; Conway and Willcocks, 1997). Thompson and Sunol (1995) provide a more refined approach by proposing four main types of expectations: Ideal, Predicted, Normative, and Unformed expectations. They defined ideal expectations as an idealistic state of beliefs reflecting an aspiration or preferred outcome. In contrast, predicted expectations are the realistic or anticipated outcome that reflects what individuals actually believe will happen; these are likely to result from personal experiences, reported experiences of others, and other sources of knowledge such as in the media. Normative expectations are thought to represent what individuals are told or led to believe ought to happen; while unformed expectations occur when they are unable or unwilling to articulate their expectations, which may be because they do not have any, or find it too difficult to express them, or do not wish to express these feelings. An important distinction between different meanings of the term 'expectations' as used in the literature was made by Parasuraman et al (1988), who stated that the term 'expectations' differs according to

the context; for example, in the satisfaction literature, expectations are defined as the individual's predictions about what is likely to happen following a service, whereas in the service quality literature, expectations are viewed as desires or wants that reflect a valuation of what the individual feels the service provider should offer.

The growing literature about expectations seems to suffer a definitional confusion and a lack of a clear conceptual framework (Kravitz, 1996). Critical review of the different definitions of expectations used in the above mentioned studies showed that desires, requests, and expectations seemed to be used interchangeably within the literature. Williams et al. (1995), for example, consider expectations as needs, requests, or desires formed before the consultation. Similarly, Kravitz (2001) and Perron et al. (2003) defined patient expectations as wishes.

The distinction between these terms is important in order to understand expectations. Desires are perceptions of wanting a given element of care (Zemencuk et al., 1998), i.e., wishes regarding specific medical care service, and in contrast to expectations, primarily reflect a valuation or a perception that a given event is wanted (Uhlmann et al., 1984). Individuals may expect to receive an undesired service or conversely, a

Figure 2 Relationship of patient desires (D), requests (R), expectations (E), and explicit expectations (EE)
Source: Uhlmann et al. (1984)

specific service may be desired but not expected. On the other hand, requests are defined as desires transmitted verbally to the clinician (Kravitz, 2001), and unlike desires and expectations that are measurable only by self-report, requests are an observable behaviour.

Further distinction of these terms was proposed based on two different conditions: value and communication (Uhlmann et al., 1984). Expectations are anticipation of an expected event, while desires are wishes for a specific wanted event; thus it is possible to differentiate between those two terms based on the value concept. Similarly, based on the means of communication, expectations would be called "explicit expectations" if they are to be verbally conveyed to doctors, while desires, which are communicated to the doctor, are to be referred to as "requests" (Figure 2).

A further confusion can be identified in the literature, where the terms 'hopes' and 'expectations' seemed to be used interchangeably (Leung et al., 2009), with 'hope' being thought of as an 'ideal expectation' (Janzen et al., 2006). Although both hopes and expectations are closely related in that they are both future-oriented cognitions; however, it might be more appropriate to consider them as independent constructs, with hopes being preference-driven and expectations being probability-driven assessment of a specific outcome (Leung et al., 2009), as in hoping for the best, but expecting the worst (Janzen et al., 2006).

2.1.2 Theories of Expectations

One of the early theories that tried to explain expectations is the expectancy-value theory (Fishbein and Ajzen, 1975), which suggested a relationship between beliefs and attitudes. According to this theory, people seem to learn expectations. In other words, each individual forms a set of beliefs that a given response will be followed by some event; these events might have a positive or negative valence that will affect the nature of the formed beliefs or expectations in either ways (Fishbein and Ajzen, 1975). The formation of expectations relies on a set of persons' subjective probability judgements concerning specific aspects of his/her life that occur by establishing a link between two objects by means of direct observation, inference from other beliefs or from some other external source such as media (Fishbein and Ajzen, 1975). Broadly speaking, there is agreement that expectations are beliefs that are formed, shaped, and maintained by means of cognitive processes; however, others suggest a combined effect of both cognitive and affective causes for expectations (Thompson and Sunol, 1995).
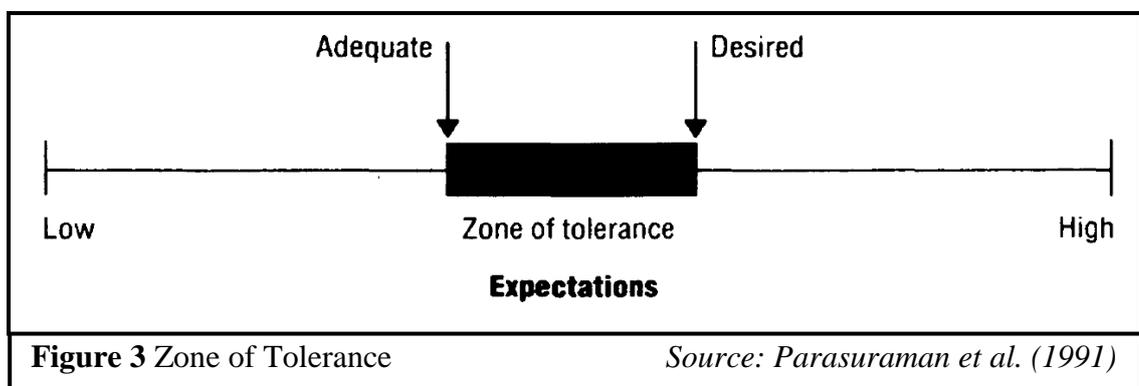
Figure 3 Zone of Tolerance   *Source: Parasuraman et al. (1991)*

Another model was proposed by Parasuraman et al. (1991), which stated that expectations are dual-levelled and dynamic. They define two levels of expectations: desired level, which is the service the individual hopes to receive; and the adequate

level, which is the level that the individual considers acceptable, and in-between these two levels, lies the zone of tolerance (Figure 3), which can expand and contract according to the context and from one individual to another. Unlike previous research that was restricted to outcome expectations, this model takes in account the important distinction between outcome and process expectations (Thompson and Sunol, 1995).

Another theory that built its foundation on the cognitive attribute of expectations is the expectancy disconfirmation theory. The main essence of this theory is that the degree of satisfaction is based on a comparison between a set of pre-formed expectations about the anticipated service quality and the actual service provided (Thompson and Sunol, 1995). According to this model, two main cognitive components - the ability to form expectations based on an anticipated standard and the ability and willingness to judge the service provided - play an important role in the process of confirmation or disconfirmation of the expectations (Thompson and Sunol, 1995).

Kravitz et al. (1996) suggested that each patient comes to the doctor's clinic with a unique set of perceived vulnerabilities to illness, past experiences, and stores of acquired knowledge; these antecedents influence the interpretation of symptoms and lead to the formulation of a set of expectations as well as establish an implicit standard of care (Kravitz et al., 1996; Kravitz, 2001). Kravitz (1996) describes patients' expectations as beliefs that interact with perceived occurrences to critically appraise the service provided. Patients perceive various events to occur during the consultation; these perceptions are based on actual occurrences that are filtered through the patients' neurosensory and psychological apparatuses. Evaluation of the service results from comparing perceived occurrences and expectancies (Kravitz, 2001). An important feature of their model is a two-way interaction between expectations and actual occurrences; patients' expectations may modify actual occurrences during the visit via direct requests, leading to a different final evaluation of service; similarly, actual occurrences (e.g., doctor's explanation or negotiation) can influence expectations.

Conway and Willcocks (1997) explained how expectations are formed in respect to four key elements: expectations, experience, expectation confirmation, and degree of patient satisfaction. A set of factors including personal characteristics, socio-economic status, previous knowledge and experience, level of perceived pain/risk, image of service provider and information are suggested to influence the formation and shaping of the range of expectations in respect to a specific service and consequently the level of satisfaction. Furthermore, they suggested that expectations are affected by a logical flow

process, where the degree of patients' satisfaction/dissatisfaction occurring at a specific occasion feeds into this group of influencing factors, and thus will influence future expectations. According to this viewpoint, the process continues as a "loop", where these influencing factors affect the formation of expectations and thus the level of satisfaction, which - in turn - will reshape these influencing factors in light of the new experiences. In this sense, they suggest that expectations can be modified by adding new information and experiences and therefore it can be managed and adapted by service providers. This supports the assumption of the dynamic nature of expectations, which is well acknowledged in the literature; the initial expectations of a service might be substantially different from the expectations if measured after a service experience, especially for those services involving several encounters, as in the case of many health care services (Yuksel and Yuksel, 2001).

Another pragmatic model explicating the formation of expectations described several incorporating longitudinal phases as the basis for the development of expectations (Janzen et al., 2006). A precipitating phenomenon is suggested to start the process and functions as the trigger for a process of comparison of the resulting experience with previous experiences of similar events and information, as well as knowledge and beliefs; this comparison constitutes prior understanding of the precipitating phenomenon. This is followed by cognitive processing of the experience in terms of probability (likelihood of the event), causality (an understanding that one event is the result of a previous action), and temporality (duration and order). All of these previous factors combine to determine an expectation of outcome, in terms of behaviour, attitude and motivation, and finally, a post-outcome cognitive processing of what has occurred takes place (Janzen et al., 2006).

Five expectation dimensions were reported in the literature (Parasuraman et al., 1991). Reliability (the ability to accurately provide the promised service), responsiveness (providing prompt service), tangibles (for example, physical facilities and equipment), assurance (the provider's knowledge and ability to inspire trust and confidence), and empathy (the caring and individualised attention provided to the patient). Assurance and empathy cover other seven original dimensions - communication, credibility, security, competence, courtesy, understanding, and access (Parasuraman et al., 1991). Thompson and Sunol (1995) identify three groups of influencing factors that play an essential role in the process of formation and modification of expectations, namely, a set of personal (e.g., needs, values, experience,

intentions, mood) and social influences (e.g., social norms, sociodemography) that combine aspects of a cognitive and affective nature, together with a third set of influences that is related to the context within which the relationship is set, i.e., the health care environment.

2.1.3 Measuring Expectations

Because of the complexity and diversity of expectations, there is no ideal method for measuring them (Thompson and Sunol, 1995). Measurement approaches have been inconsistent and variable, in terms of definition, content, and measurement design (Staniszewska and Ahmed, 1999). Different techniques were adopted to measure this construct using variable definitions, with some defining expectations as anticipation (Uhlmann et al., 1984), perceptions (Zemencuk et al., 1998), or beliefs (Thompson and Sunol, 1995), and others describing it as wishes (Kravitz, 2001), wants or desires (Parasuraman et al., 1988).

Different studies used a range of measurement tools for investigating patients' expectations, including questionnaires (Deyo and Diehl, 1986; Cherkin and MacCornack, 1989), and checklists (Kravitz et al., 1997); however, most of these questionnaires were not validated nor tested for reliability. Kravitz et al. (1997) used a pre-visit self-administered checklist of 28 potentially desired interventions, where patients were asked to rate the importance of these specific elements of care as 'definitely necessary' to 'definitely unnecessary'. Peck et al (2001) used two different instruments, a "short" instrument asking about three general expectations (tests, referrals, and medications) and a "long" instrument asking similar questions with a more detailed list of specific expectations, to determine whether different measurement instruments elicit different numbers and types of expectations. Perron et al. (2003) designed a 5-point scale, adapted from existing measurement instruments, to measure and compare patients' expectations; yet, this scale was again based on instruments designed to measure requests rather than expectations. Surveys (Klaber Moffett et al., 2000), focus groups (McIntosh and Shaw, 2003; Liddle et al., 2007), and interviews (Skelton et al., 1996; McIntosh and Shaw, 2003) were also used in previous studies.

The Patients' Intentions Questionnaire (PIQ) is one valid measurement tool used to measure patients' expectations (Salmon and Quine, 1989). This consists of 42 statements about what they want from their GP during the given visit. The PIQ was also adapted to create the Expectations Met Questionnaire (EMQ), which consists of the

same 42-PIQ statements, adapted in such a way to measure whether the pre-visit wants were received from the GP during the given visit (Williams et al., 1995). Thompson and Sunol (1995) reported that a wide and varied range of measurement approaches were used in the literature to measure expectations including various qualitative and quantitative tools such as unstructured interviews, focus group discussion and highly structured surveys, which were used to measure general as well as highly specific expectations, with some tools asking questions prospectively and others retrospectively.

Patients are alleged to prefer questionnaires to interviews, as they tend to report more expectations by structured questionnaires or a structured written checklist than semi-structured personal interview (Kravitz, 2001; Peck et al., 2001), with differences more obvious when disclosing expectations about history taking, physical examination, laboratory testing, and counselling (Kravitz et al., 1997). A mixed method approach - using a combination of structured questionnaire, focus groups, and personal interviews - might be effective in capturing all aspects of interest while measuring expectations (Thompson and Sunol, 1995). Factors such as age, sex, ethnic origin, education, past experience, symptoms, and disease chronicity may affect expectations and should be considered while choosing the study sample and the measurement tool (Kravitz, 2001).

It is important, when attempting to measure expectations, to take into consideration the taxonomy proposed by Kravitz (1996). A valid measurement tool of expectations has to abide by the following specific set of distinctive characteristics. Firstly, the content, that is, is it measuring expectations from a structure (practice style, personnel, policies... etc), process (care given), or outcome (health related and financial product) standpoints. Secondly, specificity, in the sense that, is it directed towards measuring general care or visit-specific expectations. Specificity might also be applied to whether it is directed towards general health or condition-specific expectations. Finally, measurement tool timing, i.e., pre-visit, post-visit or unrelated to a specific visit. It is important to stress this distinction when measuring expectations to avoid confusion with desires or requests.

The following section presents the general literature pertaining to patients' and GP's expectations in the context of primary care in general, regardless of the specific condition or symptom being studied. In order to understand the concept of expectations, it was necessary to initially review the literature related to expectations in general, so as to gain insight and understanding of its underlying concepts and the range of patients' and GPs' expectations in general. Thereafter, the review moves from part one (general

expectations) to part two (integrative literature review of back pain-specific expectations) to distinctively review the range of back pain patients' specific expectations of different technical and non-technical aspects of care, as well as GPs' expectations of the consultation. Reviewing the literature revealed some common features and characteristics of expectations in general, irrespective of the condition, that were important and worth mentioning for better understanding of expectations. Moreover, given the scarcity of the literature related to GPs' expectations, with most studies focusing on GPs' perceptions and attitudes, it was useful to look at GPs' expectations in different contexts and relate it to the back pain literature as appropriate.

2.1.4 Patients' Expectations

The literature pertaining to patients' expectations has been extensive since the early 1980's, with a variety of research studies approaching this aspect from different perspectives, i.e., in relation to structure (facilities, accessibility, personnel, and policies), process (interpersonal and clinical management strategies) and treatment outcome (physical, psychosocial and financial) (Kravitz, 1996). The following section casts light on different patients' expectations in relation to primary care consultations.

Patients seem to have a specific agenda when visiting their GPs, which usually reflects concerns and problems they want the GP to address during the consultation; it might also include their desires for specific services (Rao et al., 2000). For a few decades, many studies were concerned with measuring patients' expectations in different contexts, ranging from the general expectations about facilities and accessibility, to the more specific expectations related to GPs' clinical and interpersonal skills.

Interestingly, most of the patients' expectations are reported to be of a general nature, mainly receiving information or the GP listening to them and showing interest (Ruiz-Moral et al., 2007). Regardless of the problem they were consulting for, being given an accurate diagnosis and adequate explanation of the problem were the most valued expectations for most patients (Deyo and Diehl, 1986; Kravitz et al., 1994; Williams et al., 1995); two thirds of the patients expected the GPs to be able to tell them what the problem is with their back (Klaber Moffett et al., 2000). Other studies suggested that the most common expectations were GPs' understanding, showing interest, and discussing problems or doubts (Kravitz et al., 1994; Ruiz-Moral et al., 2007).

Further expectations were related to receiving information on pain management and advice on how to return to normal life (Turner et al., 1998), or information about prognosis and prevention (Sanchez-Menegay and Stalder, 1994). Overall, specific expectations for tests, prescriptions, or referral seem to be far fewer than those for information, diagnosis, listening or understanding (Ruiz-Moral et al., 2007). Therefore, although it might seem that technical interventions (for instance, tests or prescriptions) are high priority for patients, evidence suggests that, in general, desires for information or support are more valued than medical interventions (Williams et al., 1995; Ruiz-Moral et al., 2007). Most patients recognised that reassurance and advice are the main interventions their GP can offer to help them return to normal activity (Klaber Moffett et al., 2000). Yet, more than half of the patients expected prescriptions (Webb and Lloyd, 1994), two thirds expected an X-ray (Klaber Moffett et al., 2000), and about 45% expected a referral (Jackson and Kroenke, 2001). Expectations for medications and tests were met more frequently than expectations for referrals (Keitz et al., 2007). Non-technical types of interventions such as education, negotiation, and stress counselling were other expectations on the patients' agenda (Brody et al., 1989). Alternatively, some patients might consider the consultation as a way to discuss their doubts and fears as well as to challenge wrong concepts and inappropriate management (Skelton et al., 1996), while others see it as an opportunity to explore possibilities of alternative management strategies or referral to specialist treatment (Verbeek et al., 2004). A review of patients' expectations of the consultation - as stated by Verbeek et al. (2004) - reported a comprehensive range of patients' expectations as wanting a clear diagnosis, information, education, advice, physical examination, pain relief, diagnostic tests and referral to a specialist, as well as expectations of a confidence-based relationship that involves understanding, listening, respect, and being included in decision-making.

2.1.5 GPs' Expectations

In contrast to patients' expectations, the literature related to GPs' expectations of back pain consultations is scarce. In spite of the importance of understanding GPs' expectations for improving the overall satisfaction with the consultation, no study has investigated GPs' expectations of the consultation, nor is there a valid measurement tool to measure this aspect. Previous studies were concerned with GPs' perceptions (Skelton et al., 1995[a]), attitudes (Breen et al., 2007), and treatment preferences rather than expectations, or their expectations of the treatment efficacy and outcome (Wright and Kane, 1982; Galer et al., 1997; Graz et al., 2005).

Despite receiving little attention, GPs' expectations are often implicitly reported and can be implied from the findings of previous research that did not primarily seek understanding of such expectations. A range of GPs' expectations related to the consultation were reported in several previous studies, including accurate diagnosis, prescribing effective treatment, providing cure and symptom relief, patient education, provision of information and reassurance (Skelton et al., 1995[b]; Tomlin et al., 1999; Parsons et al., 2007; Anden et al., 2010).

Diagnosis seems to come on the top of GPs' expectations list; but, unlike patients' expectation of obtaining a sound diagnosis that is based on a desire to find an explanation for their pain, GPs' expectations of an accurate diagnosis is mainly concerned with managing their clinical uncertainty and maintaining their relationship with patients (Parsons et al., 2007). Other GPs' expectations were curing and preventing disease, educating patients and providing information (Tomlin et al., 1999), as well as expectations of a straightforward communication and to be believed within the consultation (Parsons et al., 2007). GPs agreed on the importance of education as a useful tool in the management of back pain; yet, they blame patients for its assumed failure as a management strategy attributed to the patients' inability to retain the information given during the consultation or lack of motivation to put the advice into operation (Skelton et al., 1995[b]).

GPs' expectations of prescribing effective treatment and avoiding unnecessary tests or referrals might yet be jeopardised with pressure imposed by patients for specific services aiming for a diagnosis or satisfactory treatment for their condition. GPs might give in to patients' requests as to ordering tests and referrals so that they can keep the clinical relationship with patients and help manage the patients' problems (Parsons et al., 2007). In an earlier study, GPs believed ordering tests or X-ray might provide reassurance to patients and denying it would adversely affect the patient-GP relationship (Baker et al., 2006). Other GPs' expectations related to patients' characteristics include expectations related to patient cooperation and compliance with the advice and treatment given. Yet, Skeleton et al. (1995[a]) stated that most GPs believed patients fail to comply with their advice.

Analysis of GPs' expectations of back pain patients revealed that GPs usually view most of the patients as 'normal' and their presenting behaviour as 'appropriate' with only a few patients being perceived as 'anxious' or 'depressed' (Skelton et al., 1995[a]). A study of GPs' attitudes to managing back pain reported GPs' feelings of frustration,

unmatched GP–patient perceptions, time-related issues, and lack of educational resources (Breen et al., 2007).

2.1.6 Sources of patients' and GPs' unmet expectations

Whether expectations are verbalised or implicitly communicated to GPs, they impose pressure on GPs' actions. As the literature reveals, GPs often feel they ought to order tests or prescriptions to respond to patients' expectations; however, evidence suggests that patients' main expectation is receiving information (Rao et al., 2000). It was suggested that patients' pressure may be stronger in the GPs' mind than in the patients' mind, and while it might influence the consultation outcome, it is not as influential as GPs' assessments of this pressure (Britten, 2004). This confusion and disagreement of perceptions may lead to unmet expectations and lower satisfaction. Alternatively, GPs might very often undervalue or not recognise patients' expectations, rendering them unmet (Jackson and Kroenke, 2001).

Exploring patients' agendas - their ideas, concerns and expectations - brings out the tension between a patient-centred model of the consultation and the structural constraints of medicine (Hamilton and Britten, 2006). This anticipated tension might explain why GPs might prefer not to discover the patients' agenda during the consultation, especially with shorter consultation time. Nonetheless, encouraging patients to raise issues and discuss their expectations in the consultation improves their satisfaction and perception of communication, particularly in short consultations (Little et al., 2004[b]). GPs might make assumptions about patients' preferences that may not be accurate (Britten, 2004). GPs need to elicit patients' expectations to prevent needless interventions, as some given interventions might not be perceived by either the GP or the patient to be strongly needed as well as to rule out misunderstandings (Little et al., 2004[a]). In order to maintain their relationship with patients, GPs might take inappropriate decisions based on their assumptions about patients' preferences, without checking whether their assumptions are correct (Britten, 2004). Exploring the patient agenda might help the GP and the patient to reach a common view about what the outcome of the consultation should be; such concordant consultations may alter prescribing, investigation, or referral decisions (Hamilton and Britten, 2006).

Patients are generally dissatisfied with GPs' communication skills and understanding (Verbeek et al., 2004), and often report having received little or no information from them (McIntosh and Shaw, 2003), although one of their main

expectations is to be listened to rather than be given a "magical cure" (Verbeek et al., 2004). Patients highly valued communication and information and were adversely affected when not receiving any from their GPs (McIntosh and Shaw, 2003). Moreover, during the consultation, GPs may use jargons not readily understood by patients, which will affect communication and might lead to patient-GP discordance (Jackson and Kroenke, 2001).

Patients' and GPs' unmet expectations might be due to the difficulties GPs experience in managing back pain in primary care without an established medical cure or sophisticated diagnostic equipment (Skelton et al., 1996). GPs are frequently frustrated by their inability to meet patients' needs (McPhillips-Tangum et al., 1998), and many doubted their patients were satisfied with their care (Turner et al., 1998). Indeed, patients were less likely to believe that their GP was comfortable and confident dealing with their problem (Cherkin and MacCornack, 1989). Lack of optimal management guidelines and the inability to provide patients with a specific diagnosis represent major sources of GPs' frustration (Turner et al., 1998). This can be explained in light of the fact that innovations in back pain care in general practice are not well sought for, due to the lack of interest among GPs and the growth in complementary therapies being more welcomed by patients (Skelton et al., 1996).

Patients' unmet expectations might be related to perceived omissions in the GP's preparation for the visit, history taking, physical examination, communication, tests ordering, referral, or prescribing behaviour (Kravitz et al., 1996). Other reasons for unmatched patient-GP expectations were the failure of a confidence-based relationship to be established; when the GP fails to diagnose and treat the pain; or when patients felt they were not believed to be in pain (Verbeek et al., 2004). Moreover, patients' unmet expectations and dissatisfaction might be due to doubts about the diagnosis they have been told, either because it conflicted with their own prior understanding, or they believed that it was based on inadequate investigations (Skelton et al., 1996). Given that discussing the effect of pain on the person's life and how to resume normal activities is highly valued by most patients, unmet patients' expectations might be attributed to the lack of GPs' interest in assessing the patient's functional limitations related to pain (Turner et al., 1998).

Other reasons for unmet or unfulfilled expectations include inadequate management strategies that affect the way GPs address patients' problems. This inadequate practice includes the GPs' inability to explain the condition adequately, the

inability to provide a proper explanation of the cause of pain or provide an accepted diagnosis, lack of information about prognosis, the superficiality of examination, the lack of GPs' interest in the problem, or poor communication skills (Skelton et al., 1996).

Time-related constraints might be a strong contributing factor to unmet expectations (Rao et al., 2000), as shorter consultation is believed to affect satisfaction (Pincus et al., 2000). Patients might feel their expectations were not met because the GP did not listen to them or did not spend enough time with them (Verbeek et al., 2004). Although longer consultations on the whole might lead to better patient outcomes, some skilled GPs are able to achieve these outcomes without spending more time (Britten, 2004). Financial constraints may play a role as well; GPs are asked to use health care resources cautiously by avoiding unnecessary referrals or reducing the use of marginally beneficial tests or medications (Peck et al., 2004).

On a different account, some negative beliefs do exist among patients; patients may ask for referral assuming that GPs cannot help (McIntosh and Shaw, 2003). Some believe GPs cannot provide cure, but can only offer referrals, or order tests to be done. Others see GPs, despite their sympathy and interest, unable to help when it comes to back pain, as they lack the qualification to give massage or manipulation (McIntosh and Shaw, 2003). In addition, changes in management strategies and development of care guidelines might challenge patients' traditional beliefs (Klaber Moffett et al., 2000), creating feelings of dissatisfaction and discordance with the GP's management. Patients may have the impression that they have been given conflicting information by the GP; this is specifically true when patients compare the information given to them by their GP with information formed based on their background, knowledge, beliefs, and experiences as well as information provided by other external sources, for example, relatives, friends or media.

Conversely, unmet expectations may be due to patients' unjustified expectations (Kravitz et al., 1996); patients might have desires or expectations for specific intervention that conflict with the guidelines or the GP's beliefs and practice style, or when they are not likely to help address the patient's problems. GPs' might not give in to pressure from patients for such services that they see unnecessary, unjustified or irrelevant, and therefore such expectations are often unmet. Unjustified and medically unnecessary expectations that patients might bring to the consultation might challenge the patient-GP relationship, especially when GPs do not respond to such expectations. Managing these unjustified expectations is another challenge for GPs; nevertheless, a

study of patients' expectations in primary care showed that unmet expectations were satisfactorily addressed by GPs with acceptable alternatives 94.7% of the time (Keitz et al., 2007). It is essential that GPs recognise these expectations, negotiate them, and educate patients to help shape future expectations appropriately.

Previous experience with the health care system may affect current expectations (Kravitz, 1996), and at times, may lead to the formation of unrealistic expectations. Kravitz et al. (1996) identified four major causes for patients' unmet expectations. Affecting 74% of the interviewed patients, somatic symptoms - in terms of functional impairment, intensity and duration of symptoms - were a major influencing factor for unmet expectations. Perceived vulnerability to illness was reported as a second contributing factor, where previously diagnosed medical conditions appear to influence current expectations. Previous experience and transmitted knowledge were other causes for unmet expectations. Similarly, patient-GP disagreement on symptom aetiology was attributed to several patient psychosocial and demographic factors including gender, history of mental health treatment and reason for encounter (Greer and Halgin, 2006). These factors might initially influence the way expectations are formed, and at a later stage will affect the way patients perceive the quality of the given service, and may as well shape future expectations (Kravitz et al., 1996).

GPs themselves may act as a powerful source of patients' expectations (Kravitz et al., 1996), and may influence how patients' expectations are formed. GPs may prescribe marginally beneficial medication, or order unnecessary tests and thus promote inappropriate expectations. It is worth noting that GPs might tend to give in to unjustified and inappropriate patients' requests in order to maintain the relationship with the patient, to manage their own uncertainty, or to challenge their feeling of impotence when managing back pain (Parsons et al., 2007). On the other hand, GPs might help shape the range of patients' expectations and prevent the development of unrealistic expectations by avoiding unjustified practice variation, involving the patients in the clinical care process, sharing their doubts and problems, as well as engaging patients in decision-making (Kravitz et al., 1996).

2.1.7 Expectations and satisfaction

Despite problems with establishing a concrete definition of "satisfaction" and difficulties with its measurement, the concept continues to be widely used (Crow et al., 2002), mainly in relation to expectations (Ross et al., 1987). Several studies used the

concept of met expectations as a valid measure of satisfaction with the provided service, suggesting a direct relationship between unmet expectations and lower satisfaction, and vice versa (Joos et al., 1993; Williams et al., 1995; Marple et al., 1997; Jackson and Kroenke, 2001; Zebiene et al., 2004). However, other studies showed controversial results regarding this relationship (Froehlich and Welch, 1996; Peck et al., 2004; Padmashree and Isaacs, 2007), with others relating fulfilled expectations to more important consultation outcomes than satisfaction, such as adherence and seeking further medical care (Ruiz-Moral et al., 2007). Satisfaction was suggested to be related to met expectations for nontechnical interventions, such as education and stress counselling, but not to technical interventions, such as examination, tests or medication (Brody et al., 1989). High reported satisfaction ratings cannot be taken to indicate that patients had good experience in relation to particular services, as such experiences do not necessarily correlate with the user's evaluations of the services (Williams et al., 1998). Consequently, evaluating the quality of the service in terms of higher patient satisfaction and met expectations is problematic. Indeed, extensive review of the literature revealed that only 20% of previous studies considered expectations among determinants of satisfaction (Crow et al., 2002).

Although there would seem to be some form of relationship between perceived service quality, patient expectations and satisfaction (Conway and Willcocks, 1997); however, there is a lack of evidence that supports the feasibility and appropriateness of studying expectations in terms of satisfaction. Measurement tools that are designed for assessing satisfaction cannot be implemented to indirectly identify patients' and GPs' expectations. There is a need for studies that bear directly on measuring expectations as a main outcome measure, rather than measuring patients' and GPs' satisfaction as an indicator for met expectations. Expectations might be one of the primary determinants of patient satisfaction (Thompson and Sunol, 1995); however, satisfaction, particularly in terms of met expectations, cannot be used as a crucial measure of the quality of health care nor can it be deemed as an objective evaluation of the patient's experience and journey within the health care system, as it is a subjective and general measure that does not usually help to know what, in particular, needs to be improved (Woods, 2009).

Moreover, it is shaped by prior satisfaction with the health care and personal predisposition, as well as age and health status, which make it a very subjective evaluation of the service that would substantially differ according to the individual (Crow et al., 2002). Given such methodological and theoretical difficulties in measuring

satisfaction, patient experience might provide a more rigorous measure of the quality of the care (Staniszewska and Ahmed, 1999). Many researchers have left the beaten path of satisfaction to tackle the concept of perceived quality (Beaulieu, 2000).

2.2 Back pain-specific Expectations:
Integrative literature review (ILR)

The ILR is a structured form of research that involves identification and reviewing of all relevant literature related to a topic of interest, followed by critical analysis and synthesis of the literature in an integrated way, such that new frameworks, knowledge and perspectives on the topic are generated (Torraco, 2005). The ILR might serve several important functions, i.e., identifying gaps in the literature, central issues in an area of interest, new research questions, novel theoretical or conceptual framework and the need for future research, as well as evaluating the strength of the scientific evidence and bridging between related areas of work (Russell, 2005).

The terms 'literature review', 'integrative review' and 'meta-analysis' are often inappropriately used interchangeably (Beyea and Nicoll, 1998; Russell, 2005). Although there are similarities, these terms actually underpin three different approaches (Beyea and Nicoll, 1998). A literature review is a comprehensive summary of previous research on a topic of interest, which forms the basis for the research questions and methods and is usually presented in an introduction to new data or research findings (Beyea and Nicoll, 1998). Integrative reviews assist in maintaining a current knowledge base in a particular research area by systematically analysing and summarising past research in such a way that new research questions, frameworks, knowledge and perspectives on the topic of interest are produced (Russell, 2005). Finally, a meta-analysis goes beyond critique and integration, as it aims to quantitatively compare the outcomes of multiple studies on a given topic by means of secondary statistical analyses of the results of similar studies (Beyea and Nicoll, 1998).

In this study, ILR was the method of choice over a systematic review due to the intended exploratory nature of the new topic of 'Met versus Matched' expectations, which fits better with an ILR (Torraco, 2005; Leung et al., 2009). The search strategy adopted for the current integrative review of the literature, pertaining to back pain patients' and GPs' expectations of the consultation in general practice, is shown in Appendix 2.

2.2.1 Study Characteristics

Fourteen studies met the inclusion criteria for this review (Table 1). A range of academic and clinical settings, including general practice (*n=8*), university (*n=2*), health centre (*n=1*), community (*n=1*), walk-in hospital clinic (*n=1*), osteopath or physiotherapy clinics (*n=2*), as well as on the street (*n=1*), were included. Seven studies were qualitative in nature, while the other seven adopted a quantitative approach. Eight studies were conducted in the UK, three in the USA, one in Israel, one in Canada and one in The Netherlands. Six studies elicited expectations through interviews only and two used interviews as well as focus groups, whereas the remainder used questionnaires (*n=4*), focus group (*n=1*) or survey (*n=1*). Most studies (9 out of 14) measured general expectations, four measured post-visit expectations and only one measured both pre-visit and post-visit expectations. In all studies, expectations were measured within the context of single visit. Aspects of interest in these studies included exploring patients' expectations and satisfaction (*n=3*), patients' perceptions (*n=2*), GPs' perceptions and attitudes (*n=4*), patients' experiences and expectations of specific aspects of care (for example, information and education) (*n=4*), and finally, patient-GP agreement or concordance (*n=3*). All studies were concerned with aspects related to process of care (service provision); in addition, seven studies also aimed to explore service outcome.

2.2.2 ILR Findings

The essence of back pain care in general practice is the consultation, which is viewed as a process of negotiation between the patient and GP, guided by a specific set of expectations or an agenda (patient's and GP's), and anticipating a specific outcome. The ILR findings showed that studies focusing on back pain patients' expectations are relatively scarce; among the 14 retrieved studies, only six studies focused, whether directly or indirectly, on investigating back pain patients' expectations of the consultation. The ILR showed that patients often had limited expectations of the consultation (Schers et al., 2001). Patients' main expectations were receiving accurate diagnosis and adequate explanation of the problem (Deyo and Diehl, 1986; Klaber Moffett et al., 2000; Schers et al., 2001), relevant information and education (McIntosh and Shaw, 2003), as well as reassurance and advice on how to return to normal activity (Klaber Moffett et al., 2000; Schers et al., 2001; Liddle et al., 2007). Some patients considered the consultation as a way to discuss their doubts and fears, or to challenge wrong concepts and inappropriate management (Skelton et al., 1996), while two thirds of the patients expected an X-ray (Klaber Moffett et al., 2000).

Table 1 Studies identified from the integrative literature review of back pain-specific expectations

Study (ref.)	Year	Design	Country	Population	Setting	Measurement tool	Content	Timing	Aspect of interest
Deyo & Diehl	1986	QN [1]	USA	140 BP [3] patients	Walk-in hospital clinic	Questionnaire	Process Outcome	Pre- and post- visit	Patients' expectations and satisfaction
Cherkin & MacCornack	1989	QN	USA	457 BP patients	Medical health centres	Questionnaire	Process Outcome	General	Satisfaction with aspects of Chiropractic/and GP care
Skelton et al.	1995ª	QL [2]	UK	12 GPs [4]	General practice	Semi-structured interview	Process	General	GPs' perceptions
Skelton et al.	1995ᵇ	QL	UK	52 BP patients 10 GPs	General practice	Semi-structured interview	Process	General	Patients and GPs' perceptions of patients' education
Skelton et al.	1996	QL	UK	52 BP patients	General practice	Semi-structured interview	Process Outcome	General	Patients' views and experiences
Hermoni et al.	2000	QN	Israel	100 BP patients 16 GPs	Family practice	Telephone interview	Process	Post-visit	GP–patient concordance
Klaber-Moffett et al.	2000	QN	UK	507 subjects 40% BP patients	On the street	Survey	Process	General	Public and patients' perceptions
Pincus et al.	2000	QN	UK	60 BP patients	General practice Osteopath clinics	Questionnaire	Process Outcome	Post-visit	Satisfaction with management
Schers et al.	2001	OL	The Netherlands	20 BP patients 20 GPs	General practice	In-depth interview	Process	Post-visit	Patients' expectations and GP adherence to guidelines
McIntosh & Shaw	2003	QL	UK	37 BP patients 15 GPs	General practice	Semi-structured interview Focus group	Process Outcome	General	Patients' and GPs' expectations of information
Staiger et al.	2005	QN	USA	380 BP patients	Academic and community clinics	Telephone interview	Process Outcome	General	GP–patient agreement about aspects of care
Azoulay et al.	2005	QN	Canada	35 BP patients	Physiotherapy clinic/other	Telephone interview Questionnaire	Process Outcome	Post-visit	Perceived patient-GP agreement
Breen et al.	2007	QL	UK	21 GPs	General practice	Telephone interview Focus group	Process	General	GPs' attitudes
Liddle et al.	2007	QL	UK	18 BP patients	University setting	Focus group	Process	General	Patients' experiences, opinions and treatment expectations

[1]*QN – quantitative study;* [2]*QL – qualitative study;* [3]*BP – back pain;* [4]*GP – General Practitioner*

Much like the general literature on GP's expectations, the ILR revealed that research investigating GPs' expectations of the back pain consultation is lacking, with only two studies exploring GPs' attitudes (Breen et al., 2007) and perceptions regarding back pain management in general practice (Skelton et al., 1995[a]), and another exploring GPs' expectations regarding information provision during the back pain consultation (McIntosh and Shaw, 2003). As reported earlier, in spite of the importance of understanding the range of GPs' expectations of the back pain consultation, no study has investigated such an aspect, nor is there a valid measurement tool. Furthermore, the ILR showed that studies investigating the matching of patients' and GPs' expectations are limited, with only three studies investigating patient–GP agreement or concordance (Hermoni et al., 2000; Azoulay et al., 2005; Staiger et al., 2005), while others focused on satisfaction or expectations of specific interventions (McIntosh and Shaw, 2003).

2.3 Critical appraisal & identification of literature gaps

This chapter sought better understanding of the concept and definition of expectations, theories and conceptual models of expectations, methods of measuring expectations, the range of back pain patients' and GPs' expectations and sources of unmet expectations. Based on the findings outlined in Table 2, the following section presents a critical appraisal of the reviewed literature in an attempt to identify gaps in the literature and justify the need for the current study.

Table 2 Key findings of the literature review

Aspect	Summary of findings
Expectations: definition and concept	Expectations are defined and conceptualised in many different ways with little consensus regarding the definition. A standardised definition and a clear conceptual framework are lacking.
Measuring expectations	Various tools have been designed to measure patients' expectations, yet there is disagreement in the literature on standardised methods of eliciting and monitoring them. No measurement tool is available for measuring GP's expectations or the matching of patient-GP expectations.
Patients' expectations	Patients' specific expectations for care are prevalent and have a crucial effect on the consultation outcome. Psychosocial aspects of care and information provision are more valued by patients than technical clinical interventions. Studies investigating back pain patients' expectations are scarce.
GPs' expectations	Despite its potential importance, GPs' expectations of the back pain consultation are inadequately studied, and there is a need for future studies to investigate this aspect and develop appropriate measurement tools.
Sources of unmet expectations	The literature suggests various reasons for unmet expectations; predominantly, a lack of recognition of what the other party might expect during a consultation

Meeting patients' expectations is one measure of the quality of health care systems (Kravitz et al., 1996). The research in this area has been growing, but is still relatively sparse and encounters some difficulties (Kravitz, 2001; Ruiz-Moral et al., 2007). Among these are the nature and great diversity of expectations, various ways of communicating them, and the disagreement in the literature about methods to identify, elicit, and monitor expectations (Ruiz-Moral et al., 2007).

Reviewing the literature revealed several shortcomings in previous studies. Gaps in the literature were identified and were mainly related to the following key areas:

1. Lack of a standardised definition of expectations.
2. Lack of studies investigating condition-specific rather than general expectations.
3. Heterogeneity of measurement tools and inconsistency of measurement approaches.
4. Lack of research investigating the matching of patient-GP expectations.

These issues are discussed in more detail in the following section.

1. *Lack of a standardised definition of expectations*

Some studies used the terms hopes, requests, desires, and expectations interchangeably, with no precise definition of these terms. Most studies failed to acknowledge the conceptual difference between hopes, desires, requests, and expectations and there is a need for a distinctive definition for each of those terms (Peck et al., 2004; Janzen et al., 2006; Leung et al., 2009). With respect to the 'expectations' research, Crow et al. (2002) emphasised that basic conceptual questions remain to be answered, including the definition of expectations and how they can be measured. Based on the literature, we define expectations as anticipations or predictions formulated by individuals about specific interventions they are likely to receive during a consultation, which are influenced by knowledge, previous experiences, and information received from other sources. Desires are wishes or preferences, which reflect the individual's valuation of a specific service. Requests are defined as wishes or preferences that are verbally communicated to GPs, and thus, in contrast to expectations and desires, it can directly be observed and monitored during the encounter. A precise definition of expectations seems to be a minimal prerequisite for developing valid measurement tools for this aspect. Efforts to understand and measure expectations will only succeed when a clear distinction between expectations and its associated terms is fully addressed in future research.

2. *Lack of research investigating condition-specific rather than general expectations*

The majority of studies that looked into expectations were mainly concerned with studying patients' expectations in general and not in relation to the specific condition; yet, expectations might be influenced by the specific problem (Kravitz et al., 1996). Relatively little is known about the specific expectations back pain patients bring when they seek medical consultation in primary care (Peck et al., 2004). The current trend of looking into expectations in general has to be challenged in favour of studying expectations in relation to the specific condition. Eliciting condition-specific expectations may help reduce unmet ones, improve satisfaction, and promote better communication (Jackson et al., 1999).

Among the early research exploring back pain-specific expectations, Deyo and Diehl (1986) looked into sources of dissatisfaction among back pain patients. Although they did not initially explain the range of expectations they wanted to investigate nor did they adopt a standardised approach for measuring unfulfilled expectations, however, this study was valuable for future research, as it showed that patients valued receiving adequate explanation of the problem rather than desires for tests or other clinical interventions. Later, Skelton et al. (1995[a] & 1996) conducted two studies focusing on back pain management in primary care in terms of GPs' perceptions and patients' views. Likewise, public perception about back pain management in primary care was studied using on-the-street surveys (Klaber Moffett et al., 2000). Lack of a consistent definition of expectations and using the terms 'perceptions' or 'views' in these previous studies interfered with obtaining a clear representation of patients' expectations.

Chronic back pain patients' perceived usefulness of the advice and exercise given was studied by means of focus group discussion to identify limitations for recovery (Liddle et al., 2007); this was a valuable study, from practical and clinical viewpoints, as it sought in-depth understanding of patients' expectations of exercise and return-to-activity advice as well as patients' adherence to the treatment. Nevertheless, including chronic back pain patients only limited the generalisation of the study findings; these patients, who have experienced a variety of failed treatment approaches, will have a different range of expectations (probably affected by previous experiences with the health care system and possible dissatisfaction with previous management strategies), which would not be a good representation of the expectations of the typical back pain population consulting in general practice.

Similarly, differences in the perceived importance of patient education in back pain management from GPs' and patients' perspectives were studied (Skelton et al., 1995[b]). Considering the importance of patient education as a powerful management tool, this study was very useful in stressing difficulties and limitations facing the efficient use of such an intervention as well as setting the stage for improvements in the field of patient education for back pain management in primary care. Another study on the relationship between GPs' recommendations and patients' adherence to the given advice provided better understanding of the patient-GP concordance and the range of unmet needs that might promote non-adherence to treatment (Hermoni et al., 2000). Nonetheless, this report did not discuss or investigate patients' or GPs' expectations. Similarly, reasons for non-adherence to guidelines were investigated by interviewing GPs and patients, who agreed that patients' experiences and GPs' response to patients' preferences are the two main factors for the non-adherence (Schers et al., 2001). While the main aim was to investigate barriers and facilitators for implementation of guidelines, this study was valuable in eliciting important patients' expectations and different motives underlying these expectations as well as patients' reasons for seeking medical help. Moreover, from GPs' perspective, the study highlighted GPs' views about back pain patients, their perception about patients' reasons for encounter, their management preferences, and their opinions regarding different aspects of back pain management in primary care.

McIntosh and Shaw (2003) studied barriers facing adequate information provision in primary care and effects of lack of information on communication and satisfaction. The study provided a concise and clear picture of the patients' information needs from the process and outcome standpoints. Taking into account GPs' and patients' expectations, they investigated the significance of providing adequate information, patients' access to information materials and aspects of back pain care that patients were dissatisfied with and perceived as lacking adequate information.

Among the few studies that focused on GPs' aspect, Breen et al. (2007) investigated GPs' attitudes to managing back pain in primary care, which provided better understanding of the GPs' perspective of back pain management in general practice, mainly their preferences, perceived difficulties and relationship with patients. However, lack of a consistent definition and using the terms perceptions or views in these previous studies interfered with obtaining a clear representation of patients' and GPs' expectations. Similarly, a previous systematic review (Verbeek et al., 2004) of

patients' expectations of treatment provided better understanding of back pain patients' expectations; yet, it was not purely focused on patients' expectations in primary care. In this review, all studies of patients' expectations drawn from a wide range of contexts as well as variety of service providers, e.g., chiropractors, osteopaths and physiotherapists, were included. Moreover, they did not precisely define what they meant by expectations, therefore, studies seeking to investigate views, perceptions or attitudes were also included. Reviewing the relevant back pain literature revealed the need for a study that would focus on investigating the specific expectations of this particular population, with a specific focus on the process of development of their expectations. Generalisations about the entire medical service might mask many issues and would fail to provide useful information for service improvement (Thompson and Sunol, 1995).

3. *Heterogeneity of measurement tools & inconsistency of measurement approaches*

There has been no consistency in the measurement strategies in previous studies, nor are there valid and reliable measurement tools. Several studies have suggested that some instruments are better than others in eliciting patients' expectations. Heterogeneity of measurement tools might be attributed to a lack of clear taxonomy and conceptual framework for expectations. There is a need for a standardised definition and a consistent measurement procedure that considers the specificity (overall versus visit-specific), scope (general versus condition-specific), focus (process or outcome), and timing (pre or post-visit) of the tool, as well as well-designed, purpose-specific measurement instruments rather than generic ones.

4. *Lack of studies on GPs' expectations and matched patient-GP expectations*

Knowledge of possible controversial areas between patients and GPs in general practice care is still scarce (Jung et al., 1997). While patient-GP agreement is deemed to be an influential predictor of the consultation outcome (Punamäki and Kokko, 1995), little is known about methods to measure this agreement and the relationship between agreement and important clinical outcomes is still controversial (Staiger et al., 2005). Most previous research reported that higher discrepancy between patients and health care professionals are detrimental to patient care and outcomes (Starfield et al., 1981; Perreault and Dionne, 2006). Level of agreement has been positively associated with patient outcomes, in terms of higher satisfaction (Fagerberg et al., 1999; Azoulay et al., 2005; Staiger et al., 2005), better communication (Liaw et al., 1996), greater adherence to treatment (Maly et al., 2002; Kerse et al., 2004), rapid resolution of symptoms or positive perception of improvement (Starfield et al., 1981; Bass et al., 1986; Cedraschi

et al., 1996), as well as better general health outcomes, in terms of better mental health, social function and vitality (Staiger et al., 2005). However, the matching of patient-GP expectations and their mutual agreement during the consultation have not been adequately investigated using validated measurement tools and the impact of this matching on the consultation outcome, in terms of quality and overall effectiveness, is not yet established.

The impact of matched expectations on the more important clinical outcomes, in terms of pain, disability and return-to-work, has not been previously investigated (Perreault and Dionne, 2006), and is often overlooked in favour of the measures of satisfaction and concordance. Although the relationship between agreement and clinical outcomes is not well established in the literature, it is suggested that agreement might enhance several intermediate outcomes, i.e., communication, adherence, compliance and satisfaction, which, in turn, would improve important clinical outcomes such as symptom resolution (Staiger et al., 2005). Effective communication and patient-GP negotiation and agreement about the management plan is associated with higher patients' compliance and better outcome (Gask and Usherwood, 2002). Lower satisfaction is assumed to be associated with weaker intentions to adhere to the advice given and therefore less symptom improvement (Bell et al., 2002). Similarly, it was suggested that a 'negative medical consultation' is more likely to happen if there is no match between the GP's and patient's own diagnosis (Punamäki and Kokko, 1995).

Several years ago, it was found that patients' expectations were rarely compared with those of GPs (Jung et al., 1997). The situation has not dramatically changed during these past few years. Only a few studies were concerned with investigating such aspect. For example, although not statistically significant, a previous study (Azoulay et al., 2005) showed that disagreement was associated with higher self-perceived disability as measured by the Oswestry Disability Questionnaire (P=0.07), greater psychological distress as measured by the General Health Questionnaire (P=0.13), and more pain catastrophising as measured by the Coping Strategies Questionnaire (P=0.09). However, this disagreement was not associated with greater time off-work and later return-to-work or significant effect on chronicity (Azoulay et al., 2005). In contrast, Gabbay et al. (2003) suggested that mutual agreement between GPs and patients is an independent variable and was not predictive of clinical outcomes. Other studies showed that higher disagreement on pain intensity was actually favourable to pain outcome (Cremeans-

Smith et al., 2003; Perreault and Dionne, 2006). The controversy still exists and the need for a study to address these issues is deemed to be crucial.

In conclusion, although no study has explicitly revealed a direct positive impact of matched patient-GP expectations on important clinical health care outcomes, there are indicators that higher satisfaction, compliance, perception of improvement and better general health are associated with such an agreement, which might be important predictors and determinants for improved clinical outcomes. It is hypothesised that the agreement of patient-GP expectations would lead to a better consultation; however, no previous study has been conducted to test such a hypothesis by exploring the matching of patient-GP expectations (Kravitz et al., 1996), nor is there a valid measurement tool. A study is needed to test this hypothesis and establish the basis and rationale for a potential 'Agreement-Better consultation outcome' relationship. The current research study should be viewed as 'setting the stage' work and an introduction to a fruitful aspect of back pain management that can have potential influence on the consultation outcome in terms of patient outcomes, i.e., perceived improvement, satisfaction and compliance, as well as important clinical outcomes, i.e., reduced pain severity and disability, return-to-work and less health care resources utilisation. A state of matched (and not just fulfilled) patients' and GPs' expectations is suggested to be a critical prerequisite for improving management of back pain in primary care. Lack of valid measurement tools appears to be the main barrier for exploring this aspect.

On another account, many previous studies have focused on patients' unmet expectations, but none sought to explore prevalence or sources of unmet expectations among GPs, possibly due to lack of valid measurement tools. Although meeting patients' expectations and achieving patients' satisfaction might be key elements for improving back pain management in primary care, however, in order to improve the clinical encounter and patient-GP communication, GPs' expectations and satisfaction with the consultation ought to be considered as well. Matching patients' and GPs' expectations may improve the quality of patient-GP communication as well as the quality of care service provided; yet, a study is needed to test this hypothesis. It was also noted that studies investigating GPs' perspective were mainly concerned with expectations related to outcome; relatively little is known about other aspects of expectations GPs might have during the consultation, e.g., expectations related to care process and practice preferences.

In reviewing the literature, previous research was analysed in light of two different concepts: unmet expectations and unmatched expectations. Unmet expectations can be defined as a specific service, event, or action expected or wanted before the consultation and not received, whereas unmatched expectations might be defined as a state of lack of agreement between GPs' and their patients' expectations. Given the assumed effect of unmet expectations on satisfaction, extensive research has been conducted in many contexts and with different outcome measures to study unmet expectations and its possible consequences on the process, outcome, and satisfaction with the provided care. Conversely, no previous study attempted to explore the potential impact of unmatched expectations on different aspects of the consultation.

2.4 Reflection on the reviewed literature

It is worth noting that while it might be assumed that patients request referrals to secondary care in order to get specialised treatment, a better health outcome, or greater improvement, the literature suggests that differences in satisfaction with GPs and other primary care professionals' management were not related to aspects of effectiveness or perceived usefulness (Pincus et al., 2000). Indeed, clinical outcomes, such as time to functional recovery and return to work were not significantly different between GPs and other health care professionals, with the GPs providing the least expensive care for back pain (Carey et al., 1995). However, patients' satisfaction with the chiropractors' management was three times higher than that with the GPs' for aspects of information provision and personal caring (Cherkin and MacCornack, 1989), and was higher for osteopaths' management for aspects of diagnosis, thoroughness of examination, communication, listening, and caring (Pincus et al., 2000). Patients valued personal relationships and communication, which were offered more often by chiropractors and osteopaths, leading to improved overall experience and higher patient satisfaction with their management compared to the GPs. Back pain management in primary care might benefit from implementing specific facilitators that can help improve patients' experiences in general practice, specifically, time spent on visit, listening, communication, empathy and addressing patients' emotional needs.

Understanding the role of expectations is important for several reasons. Firstly, GPs' recognition and acknowledgment of patients' expectations will promote more effective communication and a better clinical outcome. Secondly, GPs' ability to elicit and address patients' unrealistic expectations, whether by negotiation, explanation, or education, will prevent feelings of dissatisfaction and will result in well-formulated

future expectations. Thirdly, considering the GPs' expectations and facilitating a state of matched patient-GP expectations will create a higher overall level of satisfaction, better communication, as well as better concordance. Finally, recognising and understanding patients' and GPs' expectations may help tackle possible barriers to the application of care guidelines.

2.5 Summary and recommendations

In summary, the literature review revealed that most of the previous studies focused on identifying patients' expectations, ways to elicit and fulfil these expectations, and whether these expectations were met or not. In addition, some studies were concerned with investigating the relationship between fulfilment of expectations and satisfaction. Most previous studies focused on patients' general expectations rather than condition-specific ones. The majority of the expectations research has broadly focused on the entire range of expectations of patients attending general practice, where patients are likely to bring more and varied expectations. To date, no previous studies attempted to explore back pain patients' and their GPs' condition-specific expectations, and none were conducted to investigate the matching of their expectations. Furthermore, the potential importance of matched expectations, possible consequences of unmatched expectations, ways to match these expectations and the relationship between matched patient-GP expectations and important clinical outcomes have not been studied before. The more we know about back pain-specific expectations, the better will we be able to design clinical systems and educational programs that can help GPs meet patients' needs and expectations in a cost-effective manner (Peck et al., 2004).

Research is needed to address these gaps by exploring the feasibility of developing valid and reliable measurement tools for capturing patients' and GPs' back pain-specific expectations. Further research is needed to investigate the matching of patients' and GPs' expectations as well as to explore the perceived importance of matched expectations. Despite the established importance of expectations in the literature, yet, direct evidence concerning the management of expectations during the consultation is lacking (Keitz et al., 2007). Understanding patients' and GPs' expectations and taking them into consideration when developing clinical guidelines might facilitate the uptake and adoption of such materials. Research needs to continue to be developed to look at possible relationship between expectations and important clinical outcomes in variety of health care contexts and different conditions aiming to develop an understanding of the role of fulfilled expectations in determining the consultation outcome.

2.6 Justification of the study

2.6.1 Patients' perspective

Understanding patients' expectations could lead to meeting healthy and appropriate ones while adjusting and responding to inappropriate unjustified ones with proper negotiation, education or alternatives, hopefully, leading to better shaped future expectations. Matching patients' and GPs' expectations could lead to an improved perception of the clinical encounter, in terms of better communication and interaction, higher concordance and adherence, higher satisfaction, and enhanced overall quality of the health care service, as well as the establishment of a superior confidence-based partnership-based patient-GP relationship, where the patient is involved in the decision making process; yet research to ascertain this premise is lacking.

2.6.2 GPs' perspective

Health expectations are frequently perceived by health care professionals as a negative aspect of the patient care, attributing to its associated pressure and requests, and also anticipating them to be unrealistic, unnecessary or unjustified. The possible positive effects of realistic healthy expectations are often overlooked, with most professionals ignoring its potent effects on the consultation outcome. GPs might accuse patients' expectations of being a barrier for GPs' adherence to guidelines, for effective communication, or for a healthy patient-GP relationship. However, the current study suggests that patients' expectations might be a strong drive for adherence and concordance. Raising the awareness regarding the importance of recognising patients' expectations and promoting the matching of patient-GP expectations would lead to better interaction, concordance and satisfaction; yet a study is needed to investigate this hypothesis. Moreover, research seemed to ignore or undervalue GPs' expectations despite its influential effect on the service outcome and there is no valid and reliable measurement tool to measure this dimension. A questionnaire that identifies GPs' expectations might have several clinical values; for example, it can be used for improving clinical management strategies, influencing policies and guidelines, identifying training needs, monitoring of performance, and performing audits. In such an area where GPs feel very much frustrated, understanding patients' expectations and reinforcing patient-GP agreement would improve GPs' overall satisfaction with back pain management in primary care.

2.6.3 Research perspective

There is no valid and reliable measurement tools for measuring patients' and GPs' back pain-specific expectations, which constituted a major limitation in previous studies, and represented a main barrier that interfered with conducting further studies to explore the congruency of such expectations. It is apparent that a lack of a precise definition of expectations and/or a lack of a standardised measurement approach is a further impediment to research. A valid measurement tool of patients' and GPs' back pain specific expectations seems a key prerequisite for understanding patients' and GPs' expectations and the importance of matching their expectations on different aspects of the clinical process of back pain care. There is a need for a rigorous, precise definition of expectations and research that focuses on investigating back pain-specific expectations in a way to develop better understanding of this phenomenon and its impact as one of the potent determinants of the quality of health care using valid measurement tools.

2.6.4 Policy perspective

Current issues around back pain management in primary care include quality improvement, linking practice to evidence, patient involvement in decision making as well as emphasising the partnership principle between health organisations and patients. As a result, policy makers and health care systems - and accordingly research - are now interested in different measures of the quality of health care. Patient's experience, satisfaction and the overall journey within the health care system are attracting the focus of most improvement projects and research studies. As reported in the Chief Medical Officer report (2008), chronic pain is not as well controlled as it could be; systems and infrastructure are not adequate to meet needs or demand, and better coordination of services designed around the patient's needs are essential. However, pragmatically, the challenge actually extends beyond the patients' perspective to involve GPs as an equivalent, complementary and significant partner in this complex multi-dimensional relationship, and as discussed earlier, it would be more sensible to consider this relationship when developing policies, management strategies and clinical guidelines. Barriers to the implementation of and adherence to clinical guidelines could be addressed and overcome by recognising and acting upon patients' and GPs' expectations in such a way to optimise the consultation.

Chapter III

Conceptual Model Development

Met or Matched?!
What accounts for a successful back pain consultation?

3.1 Introduction

This chapter presents the 'Met-Matched' conceptual model, which was developed to address the issues and gaps identified in the literature review chapter, namely, the definitional confusion with regard to expectations, the lack of conceptual framework that can address the interchangeable use of several related terms (e.g., expectations, desires and requests) and the limited attention and interest of the relevant literature in the subject of matched patient-GP expectations. The main aim for developing this model was to provide a rudimentary conceptual framework to structure the research questions of the current study, as well as future studies seeking to investigate the potential importance and impact of matched patient-GP expectations on different aspects of the consultation.

As discussed earlier in the introduction chapter, the issue of Met versus Matched expectations was first raised during a series of eight collaborative learning workshops involving patients and GPs as part of the LIMBIC project (review pages 2-4). The model, presented in this chapter, aimed to structure this premise of 'Met versus Matched expectations' and relate it to previous concepts and theories explaining the development and formation of expectations, with the aim of drawing the attention of future research to the important topic of "matched patient-GP expectations" and challenging the current focus on solely patients' met/unmet expectations.

3.2 Background

The recent National Health Service (NHS) report ''High Quality Care For All'' highlighted key messages for improving the quality of health care services, mainly the importance of considering patients' opinions when developing care strategies (Darzi, 2008). In the health care context, patients' expectations for care are common (Jackson and Kroenke, 2001) and may play a vital role in their concordance with the treatment or advice given (Maly et al., 2002; Kerse et al., 2004), as well as the overall level of satisfaction with the management (Starfield et al., 1981; Azoulay et al., 2005; Staiger et al., 2005). Among patients presenting with back pain, condition specific expectations

for care may include accurate diagnosis, prognostic information, diagnostic testing, prescription of medication, or referral (Deyo and Diehl, 1986; Kravitz et al., 1994; Jackson and Kroenke, 2001; Kravitz, 2001), as well as other aspects related to GPs' understanding, listening and showing interest, (Kravitz et al., 1994; Ruiz-Moral et al., 2007). Fulfilment of these expectations has been seen as one important measure of the quality of health care systems (Kravitz et al., 1996).

There has been an increasing amount of research in this area with an emphasis on the importance of expectations and the potentially important clinical consequences of fulfilling these for a successful consultation in primary care. Patients' expectations have served as an important predictor of the efficacy of health care systems in terms of costs, quality, service utilisation and satisfaction (Kravitz et al., 1996). However, research has tended to ignore or undervalue the importance of GPs' expectations. GPs seem to have their own views and expectations about their role in general practice as well as patients' reason for visiting the GP (Ogden et al., 1997), which might have an important effect on the consultation outcome (Nordin et al., 1998), as well as GPs' job satisfaction (Ogden et al., 1997).

As shown in the ILR chapter, studies investigating the matching of patients' and GPs' expectations are lacking (Hermoni et al., 2000; Georgy et al., 2009). The effect of patient-GP agreement has been controversial and has not been well-established in the literature (Staiger et al., 2005), mainly because the majority of previous research has looked at the impact of agreement in terms of patient outcomes, for instance, satisfaction and compliance (Starfield et al., 1981; Bass et al., 1986; Cedraschi et al., 1996; Maly et al., 2002; Azoulay et al., 2005; Staiger et al., 2005), rather than the more important clinical outcomes such as pain severity, disability and functional capacity; nevertheless, most previous research reported that higher discrepancy between patients and health care professionals is detrimental to patient care and outcomes (Starfield et al., 1981; Perreault and Dionne, 2006). GPs perceived patients as less cooperative as a result of low agreement (Greer and Halgin, 2006), which would affect the overall consultation, in terms of communication and concordance. Recent evidence reported a significant discordance and mismatch of patients' and GPs' shared experience of the back pain consultation in relation to the management approach (biomedical versus bio-psychosocial), the treatment expectations and goals (reducing pain versus improving function), and the importance of diagnosis (Allegretti et al., 2010), which highlights the need to address this significant issue.

Back pain care will benefit from research that critically looks at patients' and GPs' expectations (Schers et al., 2001). From a policy perspective, it is important that patients' and GPs' expectations are recognised, understood, and optimised in a way to enhance mutual benefit. Fulfilling patients' appropriate expectations may be a key element to improving the quality of health care. However, it is suggested that a more potent aspect that is often overlooked that could be a powerful influential factor for a more successful back pain consultation in primary care would be a state of patient-GP matched expectations rather than just a state of met expectations. Based on the findings of the literature review and a critical analysis of previous theories and conceptual frameworks of expectations, the following chapter presents the proposed 'Met-Matched' model and explains various pragmatic implications of using the model in relation to the back pain consultation in primary care.

3.3 Development of the Met-Matched Conceptual Model
3.3.1 Procedure

Building the Met-Matched conceptual model followed the methodology suggested by Miles and Huberman (1994). They suggested that framework building relies on a few general constructs that subsume many discrete events and behaviours. Based on experience, theory and often the general objectives of the study, relationships between these categories of events and behaviours are set, which lead to the formation of the conceptual framework. This is followed by a process of analysis and selection, where decisions are made about which categories are the most important and which relationships are the most meaningful. They suggested that, whether the conceptual framework is basic or elaborate, theory-driven or commonsense, descriptive or casual, it should explain, either graphically or in written form, the key factors, variables and constructs, and the presumed relationships among them.

Given the novelty of the topic of matched patient-GP expectations and the scarcity of previous research on this aspect, an ILR approach was felt to be the method of choice for reviewing the pertinent literature. The aim of conducting an ILR was to exhaustively review, examine and critically analyse the existing theoretical literature underlying the formation and development of expectations, as well as models explaining the relationship between patient-GP expectations and its influence on interaction, communication and concordance. The ultimate aim, however, was to use this analysis and critical review to develop and synthesise a new conceptual model that would integrate the findings of previous literature, while generating new perspectives

on the topic (Torraco, 2005). Using the ILR technique, the researcher attempted to answer four main questions in order to evaluate the body of knowledge relevant to the topic of health care expectations, i.e., what is known, what is the quality of what is known, what should be known, and what is the next step for research (Russell, 2005).

Distinctive steps were followed in order to provide a coherent structure for the ILR. As outlined in Figure 4, the process started by conceptual structuring of the review, in terms of identifying the topic, formulating the problem, defining the purpose and developing conceptual definitions, which would define how the topic was abstractly conceived, delineated and related to previous literature (Russell, 2005; Torraco, 2005). In other words, the organisation of the review started by formulating the problem about the issue of met versus matched expectations, followed by conceptual structuring and developing of a distinctive operational definition of expectations, which would distinguish it from other terms that might have been used interchangeably.

1. Conceptual structuring of the review
- *Identify the topic*
- *Formulate the problem*
- *Develop conceptual and operational definitions*

2. Data collection and literature search

3. Critical Analysis
- *Review the collected data/literature*
- *Evaluate the quality of the collected data*
- *Analyze and Criticize*

4. Synthesis of new knowledge
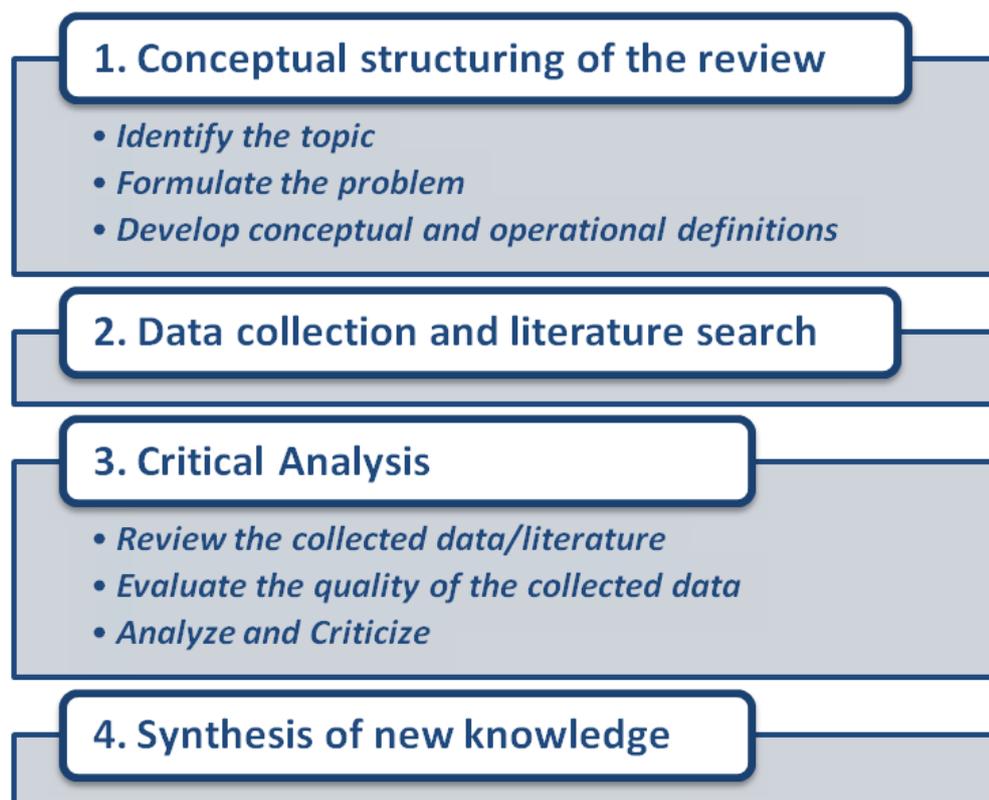
Figure 4 Procedure of developing the Met-Matched model based on the systematic steps of the integrative literature review *(Beyea and Nicoll, 1998; Russell, 2005; Torraco, 2005).*

The second step of the ILR was data collection. As the topic was new and little research has been conducted, the review needed to be broadened so that an adequate amount of information was located (Russell, 2005). In order to fully explore the construct of expectations in a comprehensive way, a broad range of study designs,

including qualitative and quantitative empirical research, as well as theoretical papers were included in the review. A search of all the relevant literature related to the range and matching of back pain patients' and GPs' expectations was carried out using a number of keywords including: physician, GP, doctor, patient, expectation, desire, preference, request, agreement, concordance, primary care, general practice, and back pain. These keywords were used in different combinations to search MEDLINE, PSYCHINFO, AMED, Science Citation Index, CINAHL, and COCHRANE databases for papers published in English from the start of each database until January 2010. All related theories, frameworks and models explaining the development or influence of expectations on various aspects of the health care were included in the collected data. The collected data was then reviewed, summarised, evaluated, analysed and criticised, in a way to identify strengths and gaps in the current literature and the need for future research (Russell, 2005). With the literature strengths and deficiencies exposed, the review and critique of existing literature culminated in the new Met-Matched conceptual model (Figure 5) that because it posits new relationships and perspectives on the topic, yields new knowledge or an agenda for further research (Torraco, 2005).

Based on the gaps identified in the literature (review page 27), the present Met-Matched model was synthesised. Synthesis refers to the process of integrating existing ideas with new ideas to create a new formulation of the topic (Torraco, 2005). The model is mainly derived from previous empirical and conceptual work related to expectations, and represents a synthesis of the available research literature plus the new perspective of met versus matched expectations. The present model integrates the existing theoretical literature underlying the formation and development of expectations with the new suggested premise of the importance of matched expectations, with the aim of explaining the relationship between patients' and GPs' expectations, while addressing and controlling for the conceptual issues and gaps that were identified in the review. The Met-Matched model, which is derived directly from the critical analysis and synthesis of existing theoretical literature, is an alternative model that provides a new way of thinking about the topic of health care expectations and its influence on the consultation and care provision (Torraco, 2005). Clear logic and conceptual reasoning were the cornerstones and the main basis for arguments, explanation and justification of the new model (Torraco, 2005). The model is presented in relation to the context of back pain management in primary care. At the heart of this conceptual model lies an appreciation of the potential importance of a state of matched patient-GP expectations in favour of a state of met expectations only.
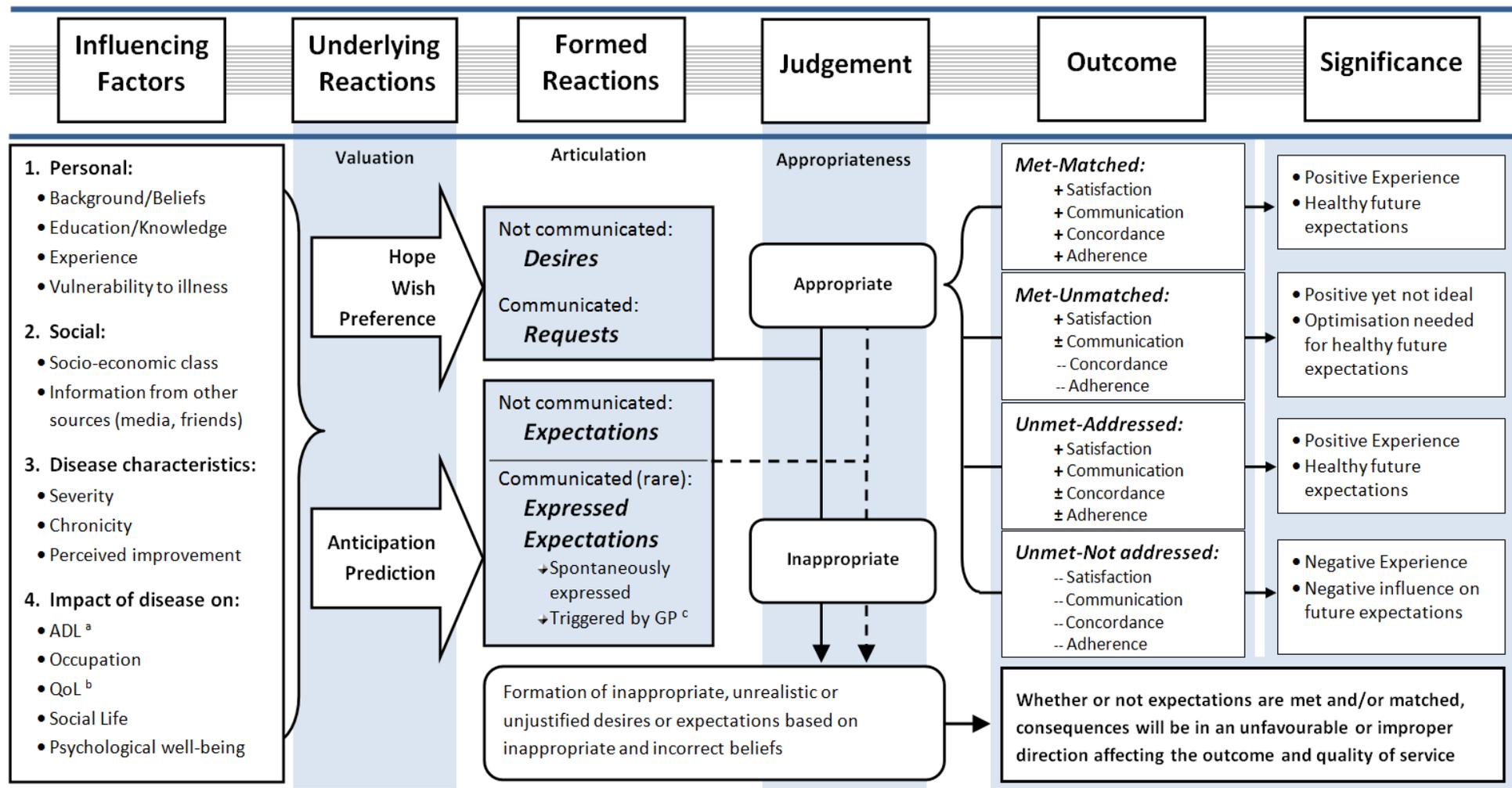
Figure 5 The "*Met-Matched*" conceptual model
a ADL: activities of daily living, b QoL: quality of life, c GP: general practitioner, + Positive effect, -- Negative effect, ± Effect in either direction

3.3.2 Outcome

Patients' and GPs' expectations could be key elements for improving the quality of health care; yet, several barriers interfere with understanding and optimising these expectations in back pain primary care (Georgy et al., 2009). Among these are the nature and ways of communicating expectations, and the disagreement in the literature about methods to elicit and monitor them (Ruiz-Moral et al., 2007). Measures of the quality of health care have recently shifted from looking into satisfaction as a measure of service quality and efficacy to a more robust assessment of the patients' overall journey and experience within the health care system.

Based on the ILR of patients' and GPs' expectations, and based on different conceptual frameworks and models developed to explicate the construct of expectations, the 'Met-Matched' conceptual model suggests a conceptual framework for the relationship between different patients' and GPs' attitudes occurring during a consultation, the effects on the ensuing experience as a result of responding to these attitudes, and the anticipated influence on future beliefs, attitudes and expectations. The model proposes six levels of analysis of this relationship. The first three levels (influencing factors, underlying reactions and formed reactions) are based on previous theories and conceptual frameworks suggested in the literature (Uhlmann et al., 1984; Kravitz, 1996; Kravitz et al., 1996; Conway and Willcocks, 1997; Kravitz, 2001; Janzen et al., 2006), i.e., grounded in theory, while the other three levels (judgement, outcome and significance) present the novel concept presented by the current study with regard to 'met versus matched expectations' and its significance for a successful consultation.

Influencing Factors: The Met-Matched conceptual model is consistent with most previous research that suggests a set of influencing factors play an essential role in the early stages of expectations formulation (Kravitz et al., 1996; Conway and Willcocks, 1997; Kravitz, 2001; Janzen et al., 2006), which is guided by complex and overlapping cognitive and affective processes (Thompson and Sunol, 1995). This set of influencing factors is believed to be the main underlying foundation upon which all attitudes and reactions are constructed. These antecedents establish the basis of the presenting behaviour based on a range of personal and socioeconomic factors (such as, cultural background, beliefs, education, knowledge, experience with health care system, vulnerability to illness, socioeconomic class and information from other sources), as well as disease-related factors (severity, chronicity, impact on social life, psychological well-being, quality of life and activities of daily living). The range of formed reactions

is then judged in the subsequent levels of analysis against three discriminatory refiners: Valuation, Articulation and Appropriateness.

The model used the principles of ILR and critical analysis to integrate new knowledge and perspectives on expectations with previous theoretical frameworks and models, for example, the value and probability concept (Kravitz, 1996), value and communication model (Uhlmann et al., 1984), the expectancy-value theory (Fishbein and Ajzen, 1975), and other conceptual frameworks and models (Parasuraman et al., 1991; Thompson and Sunol, 1995; Conway and Willcocks, 1997; Janzen et al., 2006) in order to synthesise the suggested Met-Matched conceptual model. The model agrees with the distinction, suggested in the literature, between desires and expectations in terms of value and communication (Uhlmann et al., 1984; Kravitz, 1996), as well as the previously proposed standardised definitions of desires, expectations and requests (Georgy et al., 2009). The model suggests the following two stages to influence the development of expectations and desires, in terms of value and articulation.

Underlying reactions (Valuation): Hopes, preferences or wishes reflect an element of valuation; therefore will lead to the formation of requests or desires, which are defined as perceptions of wanting a given element of care (Zemencuk et al., 1998; Georgy et al., 2009). On the other hand, anticipation and prediction lack this feature of valuation, and mainly reflect a plain outlook of what is likely to happen during a consultation, without adding positive or negative appraisal to such expectancy.

Formed reactions (Articulation): The model subsequently differentiates between the formed reactions in terms of articulation; hopes, wishes and preferences that are verbally communicated to the GP are referred to as 'requests', while desires are those non-expressed ones. Similarly, expectations refer to the non-communicated form of anticipations or predictions, while the term 'expressed expectations' denotes those anticipations or predictions that are explicitly articulated to the GP.

Judgement: All formed behaviour is then judged against the critical screen of ''Appropriateness'' in terms of whether or not its underlying dynamics are based on healthy sound beliefs, assumptions and concepts, as well as its adherence and relevance to available guidelines, standards and clinical evidence. Appropriate reactions will result in healthy justified forms of wants or expectancies, while inappropriate and incorrect beliefs will most probably lead to the formation of inappropriate, unrealistic or unjustified desires or expectations.

Outcome: Moving to a different level of analysis, the model investigates the outcome of the encounter in terms of the response to the formed behaviour. The model defines various forms of the encounter outcome based on the met and matched axes: a met-matched status refers to the condition when the patient and the GP are thinking alike and the needs of both are met; a met-unmatched status denotes that the needs of one of the partners are met but there is mismatching of their wants or anticipations; unmet-addressed reflects the ability of the partners to recognise, acknowledge and respond to unmet wants or anticipations in a proper manner; while, unmet-unaddressed refers to the failure of the partners to respond and react to unmet ones.

The model suggests that higher satisfaction and better communication would be yielded in the met-matched and unmet-addressed status, which in most cases would also be associated with a higher degree of concordance and adherence to the treatment or advice given. A met-unmatched status might result in high satisfaction of one of the partners and possibly a fair degree of communication but it would most probably affect the degree of concordance and adherence to the treatment. On the other hand, satisfaction, communication, concordance and adherence are expected to be at their minimal levels in the unmet-unaddressed status, where partners fail to communicate effectively, think alike and establish an agreed plan of care.

Significance: The model then interprets these analytical levels to suggest significance of each status in terms of satisfaction (Fagerberg et al., 1999; Azoulay et al., 2005; Staiger et al., 2005), adherence to treatment (Maly et al., 2002; Kerse et al., 2004), communication and concordance (Liaw et al., 1996), as well as symptom resolution (Starfield et al., 1981; Bass et al., 1986; Cedraschi et al., 1996). It suggests a positive experience to accompany the met-matched and unmet-addressed status; a positive yet imperfect experience is suggested to be associated with the met-unmatched status with a suggestion of the need for optimisation to achieve an ideal relationship between partners; and finally, negative experiences are more likely to be expected in the case of unmet-unaddressed status.

The model also adopts the idea that the relationship between its different levels is dynamic and closed ended, which means it involves a feedback mechanism; the various resulting forms of expectancies and experiences will eventually shape the initial set of principal influencing factors (Conway and Willcocks, 1997), with the met-matched and unmet-addressed status resulting in healthy future expectations and the unmet-unaddressed one triggering negative influence on future expectations. As

discussed earlier, this emphasises the dynamic character of expectations, where the initial expectations of a service might be substantially different from the range of expectations if measured after a service experience (Yuksel and Yuksel, 2001).

Conversely, the model suggests that all inappropriate desires and expectations that are based on inappropriate or mistaken beliefs would lead to unfavourable or improper consequences in terms of efficacy, quality and overall outcome of the service, whether or not they were met and/or matched. This is in agreement with previous research stating that, whatever the type of treatment, unrealistic expectations may negatively influence patient outcome, may have adverse consequences on both the patient and clinician, and may also affect their relationship (Nordin et al., 1998).

The Met-Matched conceptual model is particularly consistent with that proposed by Janzen et al. (2006), which identified several longitudinal phases (precipitating phenomenon, prior understanding, cognitive processing, expectation formulation, outcome, post-outcome cognitive processing) explaining the development of a health expectation. However, the Met-Matched conceptual model, proposed in this study, differs substantially in that it integrates several distinctive aspects that, from a pragmatic viewpoint, would allow the model to be used in empirical research and would allow better understanding of the influence of expectations on attitudes and behaviours presenting in the real world of the medical encounter. These aspects include the appropriateness of the formed reactions (desires or expectations), expression of the formed reactions as well as this unique relationship between the patients' and GPs' expectations, in terms of matching of expectations and addressing of unmet ones.

3.4 Discussion

The essence of back pain care in general practice is the consultation, which is viewed as a process of patient and GP negotiation, geared towards information, advice or specific care (Georgy et al., 2009). Patients and GPs appear to have a specific agenda during the consultation and there seems to be a mismatch between patients' and GPs' beliefs with regard to different aspects of the consultation (Ogden et al., 1997; Georgy et al., 2009). Patients' expectations are mainly related to aspects of information, education, physical examination, GPs' understanding, listening, showing interest and discussing problems or doubts (Kravitz et al., 1994; Sanchez-Menegay and Stalder, 1994; Turner et al., 1998; Verbeek et al., 2004; Ruiz-Moral et al., 2007).

On the other hand, diagnosis seems to come on the top of GPs' expectations list (Parsons et al., 2007), along with educating patients and providing information (Tomlin

et al., 1999), prescribing effective treatment, and avoiding unnecessary tests or referrals. The reviewed literature showed that studies investigating the matching of patients' and GPs' expectations are scarce; only two studies were interested in exploring patient-GP agreement or concordance, while others focused on satisfaction or expectations of specific interventions (Georgy et al., 2009). Unmatched expectations might be attributed to patients' perception that the GP did not listen to them, or did not spend enough time with them (Verbeek et al., 2004); pressures imposed by patients for unjustified or unnecessary services (Kravitz et al., 1996); or patients' doubts about the diagnosis they have been told (Skelton et al., 1996). GPs' feelings of frustration were attributed to unmatched GP-patient perceptions, which dramatically affected their ability to apply evidence-based management of back pain (Breen et al., 2007).

Examination of the existing literature and critical review of previous theoretical frameworks revealed that aspects of patient-GP agreement or matching are often overlooked or undervalued. In fact, to date, no study has explored the matching of patients' and GPs' expectations related to back pain consultation (Kravitz et al., 1996; Hermoni et al., 2000; Georgy et al., 2009), which would hinder full understanding of the dynamics underlying the medical encounter and could deter efforts directed towards improving back pain management in primary care by reinforcing evidence-based practice. These aspects were sensibly and practically integrated in the proposed pragmatic model, which distinguishes between two different phenomena: met and matched status. Whilst the majority of the previous research emphasised the importance of meeting patients' expectations for higher satisfaction, better quality of care and more favourable outcome; it failed to capture the wider picture of the patient-GP relationship. The medical encounter structure involves the patient and GP as partners rather than patients as sole recipients of the service; the consultation is actually viewed as a negotiation, two-way interaction, between the two partners, and it would be improper to look at one aspect and not the other when trying to understand the dynamics occurring during the encounter. Patients' and GPs' expectations should equally and concurrently be considered when investigating the quality and outcome of the consultation.

The current model challenges the dominant common assumption that a state of patients' met expectations would be sufficient for an efficient and successful consultation in favour of looking at the wider perspective of the patient-GP met-matched framework. Just a state of met expectations simply means looking after the needs of one partner but not the other in a two-sided relationship, which would

influence the underlying dynamics of this relationship. Unlike met expectations, the matching and mutuality of back pain patients' and GPs' expectations might be the way forward to improving the quality of back pain consultations in general practice and might provide for the lack of definitive management strategies and could enable GPs to conquer their feelings of frustration when dealing with back pain in general practice.

To simplify the ideology of the proposed Met-Matched conceptual model, one could think of the patient-GP-policymaker-researcher relationship as a scenario of a family situation, where the parents are the researcher and policymaker, the older son is the GP and the other son is the patient. Typically, the two brothers (GP and patient) would have this mutual relationship that might occasionally face some obstacles (unmatched expectations). Ideally, the parents will help address the two brothers' needs and expectations and try to make sure their mutual relationship is kept perfect. If the parents' focus, interest and care moved in one direction, i.e., towards fulfilling the younger son's needs and expectations only for example (met expectations), this would indirectly affect the two brothers' relationship and interaction, mainly due to the fact that the older son's needs and expectations have been ignored or undervalued, and partly because the older brother will feel pressurised to respond to his brother's needs and to fulfil them as instructed or directed by the parents. A state of met expectations is not the healthy option in a two-way relationship; the matching of both parties' expectations will ensure the interaction, communication and concordance are kept at optimal levels and it is the responsibility of the parents (researcher and policymaker) to make sure both perspectives (patient and GP) are taken into consideration.

Game Theory and the "Met-Matched" conceptual model

As mentioned earlier, one of the main pragmatic issues addressed in this model is the appropriateness of the expectations, i.e., how appropriate, justified, necessary or sound a specific intervention is. Several national and international guidelines, systematic reviews, and clinical evidence-based recommendations have been developed to help clinicians establish the most appropriate intervention plans and management strategies based on the best available evidence while keeping individual patients' needs in mind. However, adherence to these guidelines and recommendations is still problematic and barriers to applying such evidence interfere with full implementation of these measures. For example, GPs might still respond to patients' unjustified expectations in order to maintain the clinical relationship with the patient (Parsons et al., 2007) or in response to perceived pressure from patients for specific interventions

(Baker et al., 2006), even if they conflicted with evidence, which would clearly create an unfavourable state of matched patient-GP expectations.

Misunderstanding the ideology, concept and scope of the proposed conceptual model would represent a crucial risk for its failure and would limit its potential implementation. Obviously, it is implied that a state of matched expectations would not always be the optimum outcome unless it is judged against a filter of 'appropriateness', i.e., patient-GP agreement about expectations that are justified and based on sound clinical evidence and guidelines. Otherwise, a patient-GP agreement, about having 'clinically' unjustified X-ray investigation (for example), would be as bad as or maybe even worse than having their expectations unmet.

The medical consultation and the patient-doctor interaction have always been core themes for research in primary care, merely because the consultation is the core activity of the health care service, with the patient and doctor being the main actors, and the interaction and communication being the main predictors of the service quality. Several models and theories (e.g., the biopsychosocial model (Engel, 1977), the four habits model (Frankel and Stein, 1999), ...etc) have been suggested and developed to explain this complex relationship between the patient and the doctor, and to understand barriers to an optimal patient-doctor interaction during the medical consultation. One of the most interesting theories that was developed to provide insight into the underlying dynamics of the medical consultation is the 'game theory'. This theory is defined as "a conceptual apparatus for describing and analysing interactive decision making and interaction during the consultation, that is based on rational choice" (Tarrant et al., 2004) . It is, therefore, possible to explain the issue of the 'appropriateness' of patient-GP expectations, and its implications on the use of the proposed Met-Matched model in light of the 'game theory' (Tarrant et al., 2004; Elliott et al., 2008; Hughes, 2008).

Given that the medical consultation is a two-way social interaction that involves interactive decision-making, game theory would have the potential to provide models for understanding the medical consultation and could be used to generate empirically testable predictions about factors affecting the quality of care (Tarrant et al., 2004). One of the common structures of the game theory is *Nash Bargaining Game*. This theory describes a two-person bargaining situation, where cooperation and collaboration would result in mutual benefit for both of them whilst non-cooperation would lead to the worst possible outcome (Nash, 1950). The theory assumes that both individuals have rational expectations and desire to maximise their gain from the situation, as well as the ability

to judge their desires in light of a full knowledge of the other individual's preferences (Nash, 1950).

Nash (1950) explained that the concept of "anticipation", i.e., a state of expectation regarding the probability of specific contingencies, is important in this theory, where a two-person anticipation is regarded as a combination of two one-person anticipations that would act together for maximum gain; thus, two individuals, each with specific expectations, would cooperate for maximising their benefit. For example, according to Nash's Theory, if we have two individuals *(A)* and *(B)*, each with a specific set of expectations *(X)* and *(Y)* respectively, provided that both have rational expectations and the desire for maximum benefit, there would be a specific anticipation *(M)* that represents the point of agreement between the two, which would give each of them the amount of satisfaction they would expect to get. Failure to achieve this agreement *(D)* would mean non-cooperation with the potential for the worst available outcome (Table 3). Thus, if $X+Y = M$, cooperation and maximum benefit for both individuals might be expected, while if either individuals has irrational or over-demanding expectations, i.e., $X+Y = D$, non-cooperation and unfavourable outcome are more likely. Otherwise, when these two previous conditions are inadequate for explaining the situation, i.e., $X+Y \neq M$ and $X+Y \neq D$, the relative relationship between *(X)* and *(Y)* would determine the degree of satisfaction and amount of benefit for each individual such that $M<X+Y<D$. In other words, one individual would be more satisfied and would receive more favourable outcome rather than mutual benefit for both individuals *(P)*; yet, it would be perceived as a better condition than a state of non-cooperation or total disagreement of both parties.

Table 3 Representation of Nash Bargaining Game Theory

Subject A

		Cooperate	Defect
Subject B	Cooperate	3, 3 *(M)*	2, 1 *(P)*
	Defect	1, 2 *(P)*	0, 0 *(D)*

0 to 3= amount of gain, where 3= best possible outcome and 0= worst outcome
M= cooperation and agreement, D= Disagreement, P= Partial agreement

Reflecting on the current 'Met-Matched' conceptual model and provided that the patient and GP are considerably rational in their expectations and would act for maximum mutual benefit for both of them (in terms of compliance, satisfaction and communication), it is suggested that a state of matched expectations would reflect maximum cooperation and best outcome *(M)*, whereas unmatched status would reflect disagreement and the worst possible outcome *(D)*. In-between these two conditions, different scenarios might occur that would reflect various degrees of agreement *(P)*, e.g., partial agreement or uneven share of benefit where one individual's expectations are met more than the other (Table 4).

Table 4 Application of Nash Bargaining Game Theory to the proposed "Met-Matched" model

<table>
<tr><td></td><td colspan="2" align="center">**GP**</td></tr>
<tr><td></td><td align="center">**Met**</td><td align="center">**Unmet**</td></tr>
<tr>
<td rowspan="2">**Patient** / **Met**</td>
<td>

Met-Matched

Met patient & GP expectations (3, 3).
Matched patient-GP expectations (M).
Appropriate patient & GP expectations.
Best possible outcome.

Example
Patient consults GP expecting explanation, information on prognosis, education, advice and painkiller - GP warm, shows interest, conducts physical examination, provides explanation, advice, education & prescribes appropriate painkiller.

</td>
<td>

Met-Unmatched

Met patient expectations.
Unmet GP expectations. } (2, 1)
Unmatched patient-GP expectations (P).
Inappropriate patient expectations.
Inappropriate GP attitude/behaviour.

Example
Patient consults GP expecting information on cause, diagnosis, advice & X-ray - Instead of negotiating these expectations, GP responds to patient's unjustified X-ray expectation, even though it contradicts guidelines, as concerned about the clinical relationship with the patient.

</td>
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<td>

Unmet-Addressed

Unmet patient expectations.
Met GP expectations. } (1, 2)
Unmatched patient-GP expectations (P).
Addressed patient unmet expectations.
Appropriate GP attitude/behaviour.

Example:
Patient consults GP expecting diagnosis, advice, painkiller & X-ray - GP shows interest, conducts physical examination, provides advice, education & prescribes appropriate painkiller - explain why an X-ray is not useful and offer appropriate explanation of possible cause instead.

</td>
<td>

Unmet-Unaddressed

Unmet patient & GP expectations (0, 0).
Unmatched patient-GP expectations (D).
Unaddressed patient unmet expectations.
Inappropriate GP attitude/behaviour.
Worst possible outcome.

Example:
Patient consults GP expecting information on cause, diagnosis, advice and X-ray – GP would not give in to patient unjustified X-ray expectation, as contradicts evidence & guidelines, yet will fail to address and negotiate with alternatives and would rather ignore them.

</td>
</tr>
</table>

0 to 3= amount of gain, where 3= best possible outcome and 0= worst outcome
M= cooperation and agreement, D= Disagreement, P= Partial agreement

Based on this simple conceptual model, it would be feasible to analyse different presenting behaviour and attitudes observed in primary care consultations. The model is particularly important in addressing a major limitation in previous research in that the expectations' literature does not distinguish between appropriate and inappropriate expectations. Guidelines and research have shown various expectations as inappropriate or negative; therefore, responding to these negative expectations would be improper. For instance, unmet patients' expectations of X-ray investigations would not necessarily mean that the GP has not been successful in responding to patients' needs. It might simply mean GP's adherence to evidence and guidelines. Research should be consistent and clear when assessing the range of patients' unmet expectations, with distinctive discrimination of different types of expectations in terms of their appropriateness. The proposed 'Met-Matched' conceptual model provides a pragmatic structure to differentiate between appropriate justified expectations and unrealistic unjustified ones through the filter of 'appropriateness', which would enable better understanding of the range and reasons for patients' unmet expectations.

The process of developing the model was mainly dominated by a subjective assumption that a state of patient-GP expectations would be in favour of better consultation outcomes. However, this hypothesis is not supported by strong empirical evidence, and thus requires further elaboration and exploration in order to establish the potential importance of matched expectations on the consultation outcome. This preliminary model is intended to set the stage for future research exploring this premise of "matched versus met expectations". Further studies are required to test this model and its implications on important clinical outcome measures, i.e., pain severity and functional capacity.

The Met-Matched model was developed based on critical analysis and synthesis of previous studies, with the main aim of providing a structured framework for the present study, more specifically, to present the underlying logic of the premise adopted by the study (i.e., met vs. matched expectations); to conceptualise the study hypothesis; to establish the justification for the study; to provide structure and focus to the research questions; to outline the study design, aims and objectives; and to suggest potential implications of the study findings.

Chapter 6 of this thesis will develop this thinking and will structure and investigate this argument about the matching of patients' and GPs' expectations and the

perceived importance of this matching on different aspects of the consultation. This might provide further elaboration and stronger evidence of whether this state of matched patient-GP expectations would have the potential of being a strong contributing factor to more successful consultations for back pain in primary care. Further discussion about the importance of the proposed model will be made in light of the findings of Chapter 5.

Potential applications of the conceptual model

Examples of the potential implementation and practical use of the 'Met-Matched' conceptual model could be inferred from analysing some consultation scenarios drawn from the context of back pain primary care. The therapeutic and clinical contribution of imaging for the diagnosis and evaluation of back pain is known to be minimal, especially if not supported by clinical findings (Boos and Hodler, 1998; van Tulder et al., 2006); however, based on inappropriate beliefs (due to any of the principal influencing factors, for example, information from family, knowledge, disease severity), patients might have inappropriate expectations of wanting X-ray investigation, even though they rarely detect serious pathology and expose the individual to radiation (Klaber Moffett et al., 2000) and increased psychological morbidity (Kendrick et al., 2001).

Managing these unjustified and improper desires and expectations is another challenge for GPs (Georgy et al., 2009). Owing to pressure exerted by patients, GPs might make a referral just for the sake of reassurance rather than for justified clinical indication (Armstrong et al., 1991; Little et al., 2004[a]; Carlsen and Norheim, 2005). GPs might order some unnecessary or unbeneficial investigations in response to this pressure from patients (Baker et al., 2006; Keitz et al., 2007), in order to keep the clinical relationship with patients (Carlsen and Norheim, 2005; Parsons et al., 2007), or to provide reassurance (Owen et al., 1990), even if it conflicted with recommendations, guidelines and standards of care. In fact, there is evidence to suggest that treatment received by back pain patients was often not in line with back-pain guidelines, particularly with respect to opioid prescription and X-ray investigation (Somerville et al., 2008); thus promoting inappropriate expectations, as GPs themselves will act as a powerful source of patients' improper anticipations or wants (Kravitz et al., 1996). Conversely, GPs might help shape the range of patients' expectations and desires, prevent the development of inappropriate ones and refine future ones by: firstly, avoiding unnecessary and unjustified practice variation and adhering to guidelines; and secondly, by attempting to elicit and address patients' inappropriate expectations,

whether by negotiation, explanation, or education, which will prevent feelings of dissatisfaction and result in well-formulated future expectations.

Another example would be a case of patients' unmet desires and expectations; even with the busy real life of GPs and shorter consultation time, patients would still expect their GPs to listen and spend enough time with them rather than give them a prescription or order some tests to be done. Expectations of education and receiving relevant information are highly valued by patients but might not always be met in general practice due to time constraints. GPs may recognise these desires and expectations and actively respond to address them with alternatives, for example, educational leaflets, Expert Patients Programmes, or back classes (unmet-addressed). In fact, an earlier study stated that unmet expectations were satisfactorily explained by GPs with alternatives that were acceptable to patients 94.7% of the time (Keitz et al., 2007). Conversely, they may fail to identify such expectations and desires, which will subsequently render them unmet, leading to adverse effects on the outcome and satisfaction with care (Rao et al., 2000) (unmet-unaddressed). GPs should endeavour to explore patients' expectations without fear of encouraging patients' requests for costly tests or referrals that are not indicated, as exploring patient expectations usually led to negotiated discussions that made encounters more successful (Kroenke, 1998). In the health care context, desires and expectations resembles a Jack-in-the-box, and it is up to GPs to decide whether to leave it closed and ignore it, which could affect the efficacy and outcome of the consultation, or on the other hand, open the box, i.e., explore, acknowledge and address patients' expectations, and subsequently challenge and help refine unhealthy inappropriate ones, which could positively influence the consultation outcome and help shape better future expectations. A possible way of challenging frustration with the current management strategies and resources available for back pain care is to address and optimise rather than ignore patients' and GPs' expectations.

As can be realised from the model, satisfaction, communication, concordance and adherence are suggested to drastically differ by just addressing patients' unmet desires and expectations; GPs don't have to necessarily meet patients' expectations to promote better communication and satisfaction; just addressing and negotiating unmet ones can very often promote positive and more favourable experiences. A final example would be an ideal and perfect relationship of met-matched expectations, where there is a status of patient-GP agreement regarding diagnosis, diagnostic plan, and treatment

outline leading to a better outcome and higher satisfaction, and subsequently a more successful encounter and a high quality primary care service for back pain management.

3.5 Conclusion

Patients' as well as GPs' expectations could be key elements for improving the quality of health care. Previous conceptual and theoretical frameworks, however, failed to appreciate the significance of such a complex relationship and interaction between patients' and GPs' expectations. The potential implications of matched expectations are often overlooked and undervalued. The proposed Met-Matched model provides a basic conceptual framework to structure and present the logic, justification and focus of enquiry of the current study, in terms of investigating the matching of patients' and GPs' expectations during the consultation, and exploring the perceived importance of this matching with regard to different aspects of the medical consultation.

The Met-Matched model was based on a series of logical probabilistic premises that, using an inductive reasoning approach, formed the underlying foundation for the model. For example, the model suggests that patients' expectations have to be revealed during the consultation, so that unjustified inappropriate ones are addressed, negotiated and adjusted. It also suggests that taking into account GPs' expectations and raising the awareness about what patients might expect from the GP and what GPs might anticipate during a consultation would potentially increase the mutual understanding between both partners, and could promote more effective communication. Such an optimised state of matched patients' and GPs' rational expectations could eventually lead to an idealistic state of concordance, higher satisfaction and less frustration. The main focus and underlying logic of the current study research questions could be summarised in a single key message proposed by the Met-Matched model, that is, matching of patients' and GPs' expectations and addressing unmet ones could be more significant aspects for a successful consultation than just meeting patients' expectations.

Chapter IV
Methodology and Methods

4.1 Introduction

This chapter covers the intended methodology and proposed study methods. It outlines the research design, sampling procedures, data collection and analysis approaches, and a few methodological and ethical considerations. Most importantly, this chapter presents a detailed discussion of the development, piloting and validity testing of the Expectations Questionnaire.

As stated in Chapter 1 (page 4), the present study attempted to answer the following research questions:

(1) What are the relevant items to be included in developing a valid measurement tool for measuring patients' and GPs' back pain-specific expectations?
(2) To what extent are back pain patients' and their GPs' expectations matched?
(3) What is the perceived importance of matched patient-GP expectations in relation to different aspects of the consultation from the patients' and GPs' perspectives?

The study had three main objectives that are closely inter-related; these were:

(1) To identify patients' and GPs' back pain-specific expectations and investigate the feasibility of using this range of expectations to develop a structured questionnaire that can measure the matching of patient-GP expectations.
(2) To investigate the matching of patients' and GPs' expectations related to the back pain consultation in primary care.
(3) To explore the perceived importance of matched expectations for patients and GPs in relation to different aspects of the consultation.

These research questions are closely inter-related as, together, they provide a comprehensive understanding of (1) the range of patients' and GPs' back pain-specific expectations of the consultation, (2) the matching of these expectations, and (3) the perceived importance of this matching for patients and GPs, using valid and reliable measurement tool that was designed for the purpose of the study. These questions, however, are not inter-dependent. It might be argued that the research questions are closely reliant on each other in such a way that if the first question is not answered the others fail. However, this is not the case. The study was designed in such an integrated way that answering each question will help provide more insight, understanding and rigour for adequate answering of the questions that follow.

For example, it might have been possible to answer the second research question using existing measurement tools from the literature (e.g., Patients Intentions Questionnaire); yet, these tools are known to have issues with their use, in terms of definition, validity, reliability, transferability and specificity to the condition/symptom. Therefore, it was decided necessary to develop a valid and reliable measurement tool for patients' and GPs' back pain-specific expectations to address these issues (research objective 1).

The third research question (the qualitative study) can be studied on its own, without reliance on the other two questions, by means of interviewing patients and GPs to explore their perceptions regarding the importance of having mutual agreement during the consultation. However, studying patients' and GPs' expectations and the matching of these expectations beforehand provided the researcher, and subsequently, the reader with deeper insight and better understanding of the issue and the context of the problem, which helped address the third question in a more comprehensive and insightful way. Therefore, the current study research questions are believed to be closely related but not inter-dependent.

In order to answer these research questions, the present research study was divided into the following parts (Figures 6a and 6b):

1 • Development, piloting and validity testing of the newly designed Expectations Questionniare.

2a • Mixed methods approach - Quantitative component: to investigate the matching of patient-GP expectations using the questionniare.

2b • Mixed methods approach - Qualitative component: to explore the perceived importance of matched expectations using telephone interviews.

Figure 6a The structure of the present study.

The following section is divided into two parts; part one (4.2) discusses the process of development, piloting and validity testing of the EQ (part 1 in Figure 6a), while part two (4.3) reports on the methodology and proposed methods of the main study (parts 2a & 2b in Figure 6a), in terms of the research design, setting or context, sampling procedure, sample size, data collection and analysis approaches.
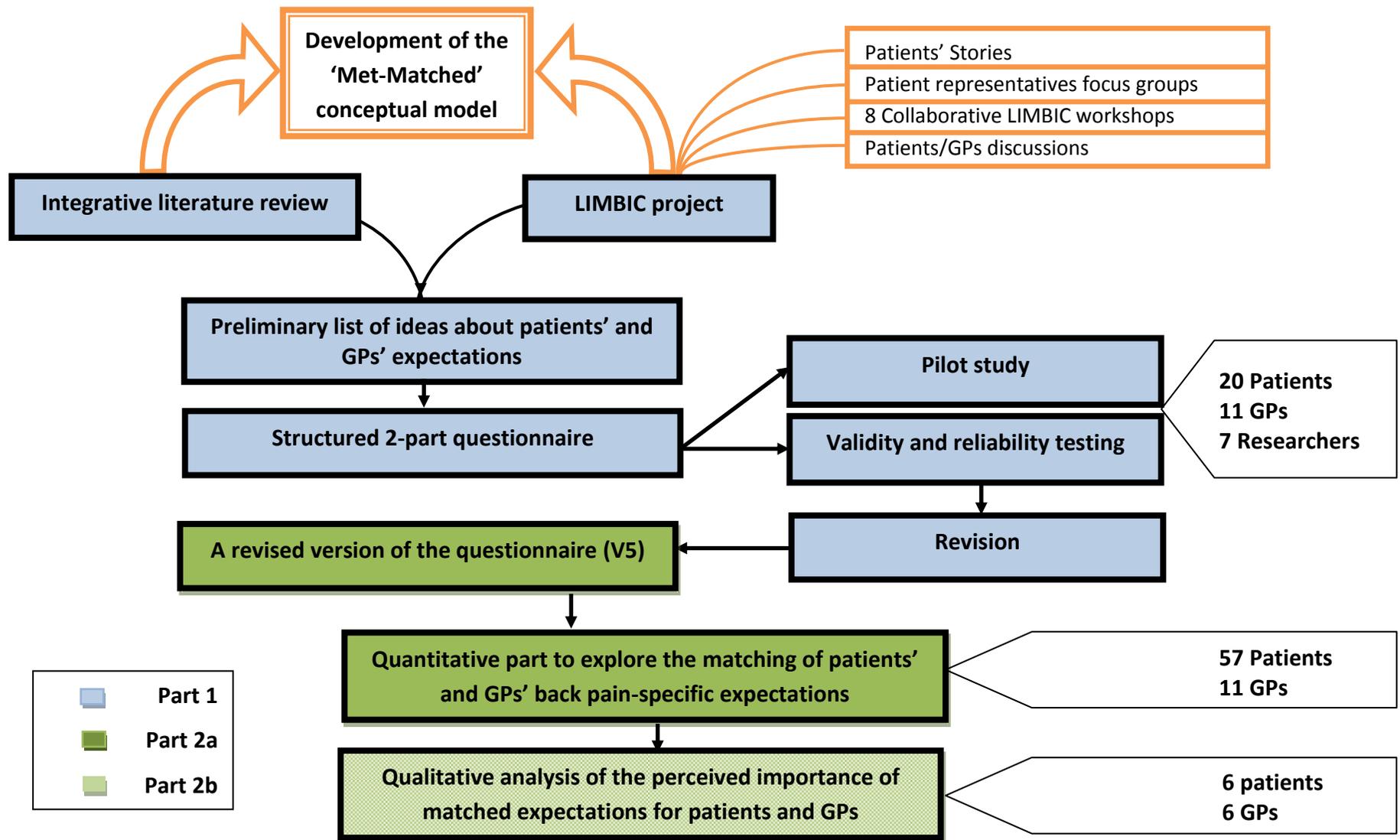
Figure 6b Flowchart explaining the different stages of the study

4.2 Questionnaire development, piloting & validity testing

4.2.1 Introduction

The purpose of this part of the study was to identify patients' and GPs' expectations of the back pain consultation using the ILR, and investigate the feasibility of using this range of expectations to develop a structured questionnaire that can measure the matching of patient-GP expectations. The following section reports on the process and steps of development of the EQ, and presents and discusses the results of a pilot study that was carried out to investigate the feasibility of the data collection and statistical analysis approaches, and to identify any problems with the practical use of the EQ for the main study. It also discusses the procedure and measures undertaken to investigate and establish the validity and reliability of the newly designed questionnaire.

4.2.2 Background

As can be realised by now, health care expectations are far more complex than previously thought. Measurement tools ought to be well designed, in terms of validity, reliability and specificity, to be able to accurately reflect this specific construct without mixing it up with any of its other associated terms. Moreover, as of the complexity and diversity of expectations and the multi-factorial predisposing antecedents and determinants, there is no ideal method for measuring expectations (Thompson and Sunol, 1995). Measurement approaches have been inconsistent and variable in terms of definition, content, and measurement design (Staniszewska and Ahmed, 1999). According to the reviewed literature, there is relatively an extensive body of literature on the measurement of expectations and satisfaction in the context of health care but only few have been specifically designed and validated for this purpose.

Previous studies adopted different measurement techniques to investigate this construct using variable definitions of expectations (Uhlmann et al., 1984; Zemencuk et al., 1998; Kravitz, 2001), and diversity of data collection methods including qualitative and quantitative approaches, and ranging from unstructured interviews or focus groups to highly structured questionnaires with some asking questions prospectively and others retrospectively (Thompson and Sunol, 1995). Moreover, expectations are influenced by the specific symptom (Kravitz et al., 1996); yet the majority of 'expectations' research focused mainly on general rather than condition-specific ones. There is a need for a standardised definition and a consistent measurement procedure, as well as validated condition-specific measurement tools rather than generic ones.

In terms of patient outcomes, patient-GP agreement is alleged to promote higher satisfaction (Azoulay et al., 2005; Staiger et al., 2005), better communication (Liaw et al., 1996), greater adherence to treatment (Maly et al., 2002; Kerse et al., 2004), symptom resolution or improvement (Bass et al., 1986; Cedraschi et al., 1996), and better general health outcomes (Staiger et al., 2005); yet, only few studies addressed this issue (Perreault and Dionne, 2006). Literature pertaining to patient-GP agreement is particularly scarce in the area of back pain (Perreault and Dionne, 2006), and, to date, none was done to measure the congruency of back pain patients' and GPs' expectations. Moreover, valid tools for investigating the matching of patients' and GPs' expectations are lacking (Kravitz et al., 1996; Hermoni et al., 2000; Georgy et al., 2009).

It may seem that patients' met expectations and satisfaction are the key ingredients for a successful consultation, and are important measures of the quality of the health care. GPs' expectations, however, may as well be a strong contributing factor to a more successful consultation, as the clinicians' practice style and views are thought to affect the outcome in back pain care (Nordin et al., 1998). From a policy perspective, it is important that patients' as well as GPs' expectations are recognised, understood, and optimised; understanding these expectations could improve the clinical care process, health care delivery systems and research (Kravitz et al., 1996).

4.2.3 Methods
4.2.3.1 Questionnaire design
The study started with identification of a research problem and formulation of several research questions; the first of which was whether it would be feasible to design a structured questionnaire that can measure the matching of patient-GP expectations of the back pain consultation using items extracted from the ILR reported in Chapter 2. The following section reports in detail the design process of the EQ (Figure 7).

(1) Selection of the questionnaire items
The first step of the questionnaire design was to generate a number of patients' and GPs' expectations that can be used for developing the EQ, in such a way that it would reflect the overall range of patients' and GPs' expectations and act as a valid representation of the typical back pain specific expectations related to the consultation in general practice. An ILR was carried out to produce a preliminary list of ideas about aspects of GPs' and patients' expectations. This review was supplemented by discussion with GPs and patients participating in the LIMBIC project in order to capture their personal experience of back pain consultations (Baker, 1990).
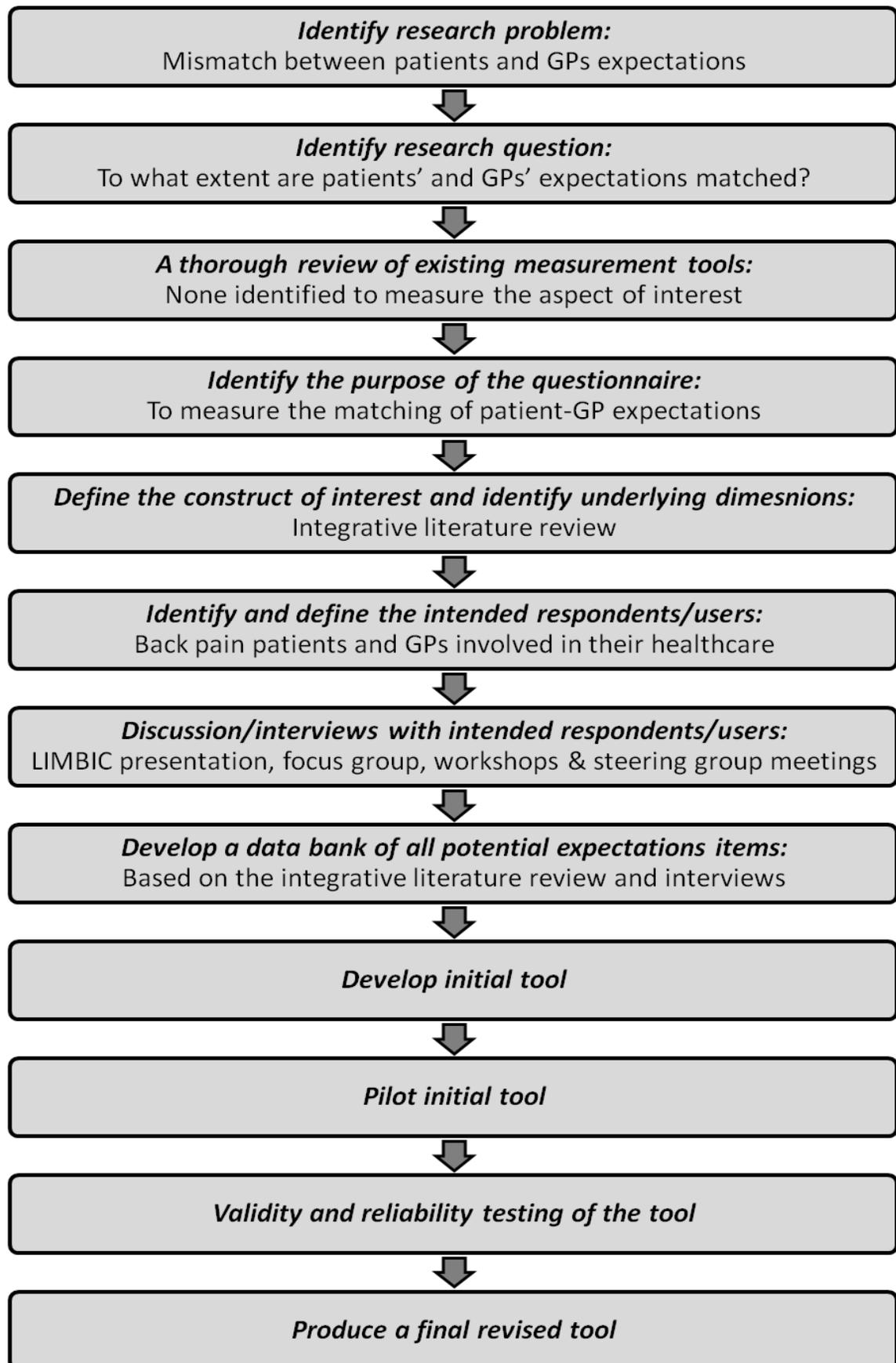
Figure 7 Steps of development of the Expectations Questionnaire
(Based on: Boynton and Greenhalgh, 2004; Onwuegbuzie et al., 2010)

Based on the ILR, a data bank was created, which included all expectation items and questions derived from a range of various instruments used in previous research for other conditions and contexts, and including qualitative studies in which key themes were converted into closed questions for the bank. Items from the data bank were used to produce a draft 36-item questionnaire consisting of two matched parts: one for patients' expectations and another -similar but adapted- for GPs' expectations (Appendix 13). The questionnaire was designed to be self-administered, brief, understandable, and easy to complete for adults aged over 18 years. A five point Likert scale was used for each statement of the questionnaire asking participants to indicate their agreement or disagreement with the statement with a score of 'one' indicating strong disagreement and 'five' indicating strong agreement. This rating method has been used in previous studies (Baker, 1990; Ahlen et al., 2007), and has the advantage of being relatively easy, simple, and attractive (Baker, 1990). For the purpose of the questionnaire, expectations were defined as anticipations formulated by patients and GPs about specific actions, attitudes, or interventions that are likely to happen during the consultation (Georgy et al., 2009).

(2) Refinement of the questionnaire

The second step of the questionnaire design was to refine the questions so that any issues with wording, complexity, repetition or overlapping were addressed (Baker, 1990). Several approaches were employed to test the selected expectation items. First, a simple check was done by asking three colleagues to complete the questionnaire and comment on the meaning and understanding of each statement (Baker, 1990). Secondly, the questionnaire went through several revisions for clarity and wording, as well as relevance of questions through series of discussions with patients, GPs, and researchers during the eight collaborative learning workshops within the LIMBIC project. Thirdly, a pilot study was carried out to address any issues with the tool design or the practical use of the questionnaire. A constant review of wording, ambiguity and item understanding was repeatedly done throughout this stage. Finally, graphic representation of the pilot study results was done to explore possible response patterns, range of scores, skewness, i.e., lack of symmetrical distribution of scores about the mean, or kurtosis, i.e., distribution that is too peaked or too flat (Baker, 1990; Grogan et al., 2000).

(3) Piloting of the questionnaire

Several versions of the revised questionnaire were produced until version 4 was ready for piloting (Appendix 14). The term 'pilot study' is used to either mean a

feasibility study, which is a small scale version or trial run of the major study, or it can also refer to pre-testing or 'trying out' of a particular research instrument (van Teijlingen and Hundley, 2001). The present pilot was designed to be external. Unlike internal pilot studies that are incorporated into the main study design, an external pilot study is an independent, stand-alone piece of work planned and conducted separately from the main study (Lancaster et al., 2004). There is no formal methodological guidance in the literature as to what constitutes a pilot study (Lancaster et al., 2004). The present study imitated the design and structure of the main study but with more focus on potential concerns and issues that might be associated with the use of the newly designed questionnaire for the main study, in what might be an exploratory approach (Maxwell, 2005).

A clear list of objectives is suggested to add methodological rigour to a pilot study (Lancaster et al., 2004). Piloting the EQ before conducting the main study helped in assessing the proposed data analysis techniques to uncover potential problems (van Teijlingen and Hundley, 2001). Other objectives of conducting the pilot study before using the questionnaire for exploring patients' and GP's expectations included identification of inclusion/exclusion criteria, testing of the data collection protocol, assessing the ease of use of the forms and questionnaires and testing the feasibility of measurement (Lancaster et al., 2004).

As mentioned above, the pilot study was carried out to uncover any potential problems with the practical use of the EQ. Version 4 of the EQ consisted of four different sections: the first asked about age, sex, occupation and duration of back pain; the second required the subjects to rank different purposes of the encounter according to its importance as well the GPs' consultation objectives; the third section included 26 expectation items derived from the literature, with a five-point Likert type scale asking for agreement or disagreement with the statement; and the last section was an open question asking subjects about any other expectations not reported in the questionnaire (Baker, 1990; Staniszewska, 1999). Participants were provided with a free text box at the end of the questionnaire to provide any specific comments or feedback about any aspect of the scale.

(4) Validity and reliability testing

The purpose of this part of the study was to test the validity and reliability of the designed tool and the appropriateness of its use as judged by users, as well as to address potential problems identified in the pilot study that might interfere with the practical

application of the tool. Baker (1991) suggested that three main prerequisites have to be addressed when designing a measurement tool, i.e., validity (appropriateness of the tool for measuring what it is designed to test), reliability (consistency of results), and transferability (measures the same construct when applied to different patient groups, in terms of age, social class or geographical region).

A valid tool is the one that can measure what it is supposed to measure rather than reflecting some other phenomenon (Carmines and Zeller, 2003). There are several different types of validity (i.e., content, face, criterion, and construct) that are relevant in the social science field, with each looking into validity from a different angle. The following different measures were employed in the current study to establish the validity and reliability of the newly designed EQ.

✦ *Content validity*
Content validity is the extent to which an empirical measurement reflects a specific domain of content; it assesses the extent to which the specific items represent measurement in the intended content area (Collins et al., 2006). To assess content validity, experts might be used to test whether a specific domain of functioning was represented by the items on a measurement instrument (Dellinger and Leech, 2007). Extensive literature review and continuous discussions with experts and patients were the main key elements for ensuring good content validity of the EQ.

✦ *Face Validity*
Face validity is making a judgement about the appropriateness of use of some particular measuring tool in a given assessment situation through the process of simple inspection of that instrument, typically done by non-expert users (Roberts, 2000). Face validity was examined in the current study by means of a validity testing survey that collected participants' opinions and comments on different aspects of the questionnaire and thus allowed for quantification and statistical analysis of their opinion.

✦ *Construct Validity*
Construct validity assess how well the tool's scoring structure corresponds to the construct domain (Collins et al., 2006). It implies that the relationship among multiple indicators designed to represent a given theoretical concept should be similar in terms of direction, strength and consistency (Carmines and Zeller, 2003). Construct validity was established by calculating Spearman's Correlation Coefficients between each item and the total expectations scores (Baker, 1990).

➔ *Concurrent validity*

Concurrent validity is demonstrated when scores from a measure correlate appropriately in hypothesised ways with other validated tools of other related constructs (Dellinger and Leech, 2007). Concurrent validity of the newly designed EQ was tested using the Patients' Intentions Questionnaire (PIQ); a previously validated generic tool that is used to identify patients' general intentions in general practice by means of 42 statements inquiring about what patients want from their GP during a given visit (Salmon and Quine, 1989). This is different from the EQ, as it measures wants (desires) rather than anticipation (expectations), and it is also generic and not symptom specific.

➔ *Internal consistency*

Reliability can be investigated by means of internal consistency, test-retest, or inter-rater reliability measures. The reliability of the questionnaire was assessed by calculating Cronbach's alpha, which is a split-half method of estimating the internal consistency of the tool. Further reliability testing was conducted at a later stage of the study using test-retest approach (reported in Chapter 5).

➔ *Transferability*

Transferability was fulfilled by means of testing the differences between the results of patients with different characteristics in terms of age, educational level, occupation, duration of symptom and geographical area using logistic regression analysis techniques in order to insure the appropriate use of the EQ for various populations with different characteristics (reported in Chapter 5).

Following this, the EQ was revised and modified and a two-part, 21-item, version 5 was produced (Appendix 5), which was used to measure the matching of patient-GP expectations in the main study.

4.2.3.2 Participants

For the purpose of piloting and validity testing of the EQ, a convenience non-random sampling approach was adopted. Thirty-eight participants from three different user groups (20 patients, 11 GPs and 7 researchers) were recruited from the LIMBIC project and the School of Health and Social Care within the University and were invited to participate in testing the questionnaire in the period between May and July 2009. These participants were chosen as they had knowledge of the subject and were conveniently available and willing to participate in the study. All participating GPs were involved in direct patient care for at least 20 hours/week in general practice. All recruited patients have had a recent consultation for their back pain, were over 18 years,

and were able to read and understand English. The third group of researchers was included with the patients and GPs groups in order to explore a different expert user's perspective.

4.2.3.3 Data collection approach

An oral presentation of the key findings from the ILR on mismatched patient-GP expectations was given to all GPs and patients during one of the LIMBIC workshops (Appendix 3). Patients' and GPs' packages were prepared, containing an information sheet (Appendix 4), an EQ (Appendix 5) and self addressed envelope, and were given to all patients and GPs attending the subsequent LIMBIC workshop, asking them to participate in the study. Each participant was required to complete the EQ and then was given another short feedback survey (Appendix 6) to comment on the face and content validity of the questionnaire. The survey included questions about the questionnaire characteristics, i.e., questionnaire appropriateness, items difficulty and understanding, ease of completion, perceived usefulness, answer format, repetitiveness, attractiveness, and administration time (Fernández, 2008). Collecting opinions in such a way allowed quantification of participants' opinions, which enabled systematic and objective quantitative face validity testing. To test the concurrent validity of the EQ, patients were also given an adapted version of the Patients Intentions Questionnaire (PIQ; appendix 7), which is a previously validated generic tool that is used to identify patients' general intentions in general practice (Salmon and Quine, 1989) (review pages 13-14). Finally, in order to capture the opinion of a different expert user group, a web-based version of the EQ and the validity testing survey were designed and emailed to all staff within the School of Health and Social Care at the University.

4.2.3.4 Data analysis approach

The ranking of the reasons for the encounter and the agreement scores for each expectation statement were collected and compared between patients and GPs using descriptive statistics (mean, standard deviation, range and percentage) and Mann Whitney's U test for independent groups. Each stated reason or objective was given a number from one to 10, equivalent to its ranking by the subject, and the total ranks were summed to calculate the overall ranking of each stated purpose. To present the range of patients' and GPs' expectations using descriptive statistics, responses to the questionnaire statements were reduced to disagree (responses 1, 2 & 3= disagree and unsure) and agree (responses 4 & 5), while the data from the full 5-point scale was used to examine differences between patients and GPs using the Mann Whitney's U test.

Descriptive analysis of the validity testing survey provided grounds for the face validity of the questionnaire in terms of appropriateness and ease of completion as judged by users and as reflected by the administration time. Construct validity was established by calculating Spearman's correlation coefficients between each item and the total expectations scores (Baker, 1990). Spearman's correlation coefficient was used to establish concurrent validity by investigating the correlation between the EQ and PIQ overall scores. Cronbach's alpha was computed to reflect the internal consistency of the instrument. Statistical Package for Social Science (SPSS 17) was used to carry out the statistical analysis.

4.2.4 Results
4.2.4.1 Participants' characteristics

Summary of the participants' demographic data is shown in Table 5. Thirty back pain patients, 16 GPs and 10 researchers were invited to participate in this part of the study; of whom, 20 patients, 11 GPs and 7 researchers agreed to participate.

Table 5 Participants' demographic data

		Patients	GPs	Researchers
Number		20	11	7
Age (mean + SD)		40 (±12)	51 (±6)	36 (±8)
Sex	Male	11	9	3
	Female	9	2	4
Years with back pain		8 (±7)	--	--
Years in General Practice		--	19 (±9)	--
Hours/week in patient care		--	>20= 9	--

4.2.4.2 Reason for the encounter

The ranking of the consultation objectives or reasons according to its importance as perceived by patients and GPs' is shown in Table 6. Diagnosis, explanation of the problem, and referrals had the highest ranks for patients, while explanation of the problem, effective pain relief, and information provision where more prevalent according to GPs. Effective pain relief, sick certificate, education and medication were the least reported by patients, while, on the other hand, X-ray, referrals, reassurance and prescriptions were less common reasons stated by GPs. About two thirds of the patients did not report education, reassurance, information, pain relief, medication, or X-ray as a possible reason for the encounter at all. Likewise, more than three quarters of the GPs reported that X-ray and referrals are not among the common objectives of the consultation for back pain.

The question about the reason for the encounter included a free textbox that was entitled 'other', which was provided for participants to state any other reasons for the encounter or agenda items that were not included in the provided set stated in Table 6. Nine participants used this space for various reasons; five used it for further elaboration and explanation of already chosen reason (e.g., one GP, who has already chosen 'Explanation' as the main reason for the encounter, added in the 'other' field that he mainly would like to explain to his/her patient in a simple way what the problem is); three participants used it to express the reason for the encounter with other wording that fitted better with their understanding (e.g., instead of choosing 'Reassurance', one participant used the provided space to state that the main reason for seeing the GP was to make sure that nothing is serious with the back); and finally, one participant used the space to express their frustration with the current back pain management (i.e., if I want the problem sorted, I don't go to a GP).

Table 6 Patients' and GPs' ranking of the reason for encounter

Reason for encounter	Patients					GPs				
	Rank	First (%)	Second (%)	Third (%)	Unstated (%)	Rank	First (%)	Second (%)	Third (%)	Unstated (%)
Diagnosis	1	65	10	10	15	5	37	-	-	37
Explanation	2	15	45	10	15	1	55	18	-	9
Referral	3	15	-	10	35	8	-	-	-	82
X-ray	4	5	15	10	55	9	-	-	-	82
Information	5	-	5	20	65	3	-	46	9	27
Reassurance	6	-	5	10	65	7	9	9	-	46
Prescription	7	-	-	5	65	6	-	-	27	27
Education	8	-	10	-	70	4	-	9	46	27
Certificate	9	-	-	5	75	-	-	-	-	-
Pain relief	10	-	-	5	80	2	-	18	18	9

4.2.4.3 Comparison of patients' and GPs' expectations

In general, patients seemed to agree with GPs in most aspects of the EQ (Table 7 and Figure 8) with the exception of six items: [Q1] sharing the reason for the encounter (U=60, P<0.05), [Q3] patients' expression of their expectations (U=58.5, P<0.05), [Q9] GPs' enquiry about the impact of back pain on social life (U=63, P<0.05), [Q12] referrals (U=40, P<0.05), [Q24] beliefs about the ability of GPs to help patients with their pain (U=52, P<0.05), and [Q25] the ability to manage the problem without need for referral (U=28, P<0.05). Descriptive analysis of the responses reveals that the majority of patients and GPs agree that GPs' showing interest and listening [Q7], as well as being warm and friendly [Q5] are common expectations for patients (90% and

90%) and GPs (100% and 82%) respectively. About three quarters of patients (75% and 85%) and GPs (82% and 73%) agreed that history taking [Q10] and physical examination [Q11] should be expected during the consultation. Patients and GPs shared their concerns about the ability of the GP to identify the cause of the problem [Q15]; yet, more than three quarters of the patients and GPs (80% and 82% respectively) expected an adequate explanation of the problem to be given during the consultation [Q16]. All GPs (100%) and the majority of patients (85%) expected information [Q17] and education [Q18] to be essential components of the consultation and they both agreed (90%) that patients should be involved in decision-making [Q22]. About half of the patients and GPs (45% and 55% respectively) revealed their perception of the time constraints during the consultation [Q23], with 65% of the patients and 55% of the GPs acknowledging the privilege other health care professionals might have over GPs in managing back pain [Q26].

Table 7 Patient-GP agreement as measured by the Expectations Questionnaire

Expectation Items	Patients (n= 20)				GPs (n= 11)				MW-U test
	%		Mean	Range	%		Mean	Range	
	A	D			A	D			
Q1. Reason for encounter explored	95	5	4.80	3-5	100	0	4.36	4-5	*
Q2. GP to ask about expectations	65	35	3.90	2-5	91	9	4.09	2-5	NS
Q3. Patient to express expectations	60	40	3.65	1-5	36	64	2.64	1-5	*
Q4. Unmet expectations recognised	60	40	3.80	2-5	73	27	3.73	2-5	NS
Q5. GP warm and friendly	90	10	4.25	3-5	82	18	4.45	3-5	NS
Q6. Patient genuine & symptoms real	80	20	4.55	3-5	73	27	4.00	2-5	NS
Q7. GP listening	90	10	4.65	3-5	100	0	4.64	4-5	NS
Q8. Doubts and fears discussed	75	25	4.00	2-5	91	9	4.55	3-5	NS
Q9. Impact on social life explored	50	50	3.70	2-5	100	0	4.45	4-5	*
Q10. Full history taken	75	25	3.95	2-5	82	18	4.18	2-5	NS
Q11. Physical examination done	85	15	4.20	2-5	73	27	3.82	3-5	NS
Q12. Referral	60	40	3.80	2-5	18	82	2.45	1-5	*
Q13. Tests/investigations	55	45	3.55	2-5	36	64	3.00	1-5	NS
Q14. Prescriptions	25	75	3.10	1-5	46	54	3.36	2-5	NS
Q15. GP to know cause	50	50	3.55	1-5	27	73	2.91	2-4	NS
Q16. Adequate explanation given	80	20	4.15	1-5	82	18	4.00	3-5	NS
Q17. Information	85	15	4.05	1-5	100	0	4.18	4-5	NS
Q18. Education	80	20	4.00	1-5	100	0	4.27	4-5	NS
Q19. Information about prognosis	85	15	4.05	1-5	73	27	3.91	3-5	NS
Q20. Patient beliefs discussed	60	40	3.70	2-5	100	0	4.09	4-5	NS
Q21. Patient ideas discussed	50	50	3.55	2-5	82	18	4.00	3-5	NS
Q22. Patient part of decision -making	90	10	4.15	3-5	91	9	4.18	3-5	NS
Q23. Adequate consultation time	40	60	3.25	1-5	18	82	3.27	2-5	NS
Q24. GP can help with the pain	40	60	3.15	1-5	73	27	4.18	3-5	*
Q25. GP manages without referral	10	90	2.40	1-5	73	27	3.91	3-5	*
Q26. Other HCP privilege	65	35	4.15	3-5	55	45	3.55	3-4	NS

*% = percentage of agreement, A= agree, D= Disagree, MW-U test= Mann Whitney U test, *= P< 0.05*
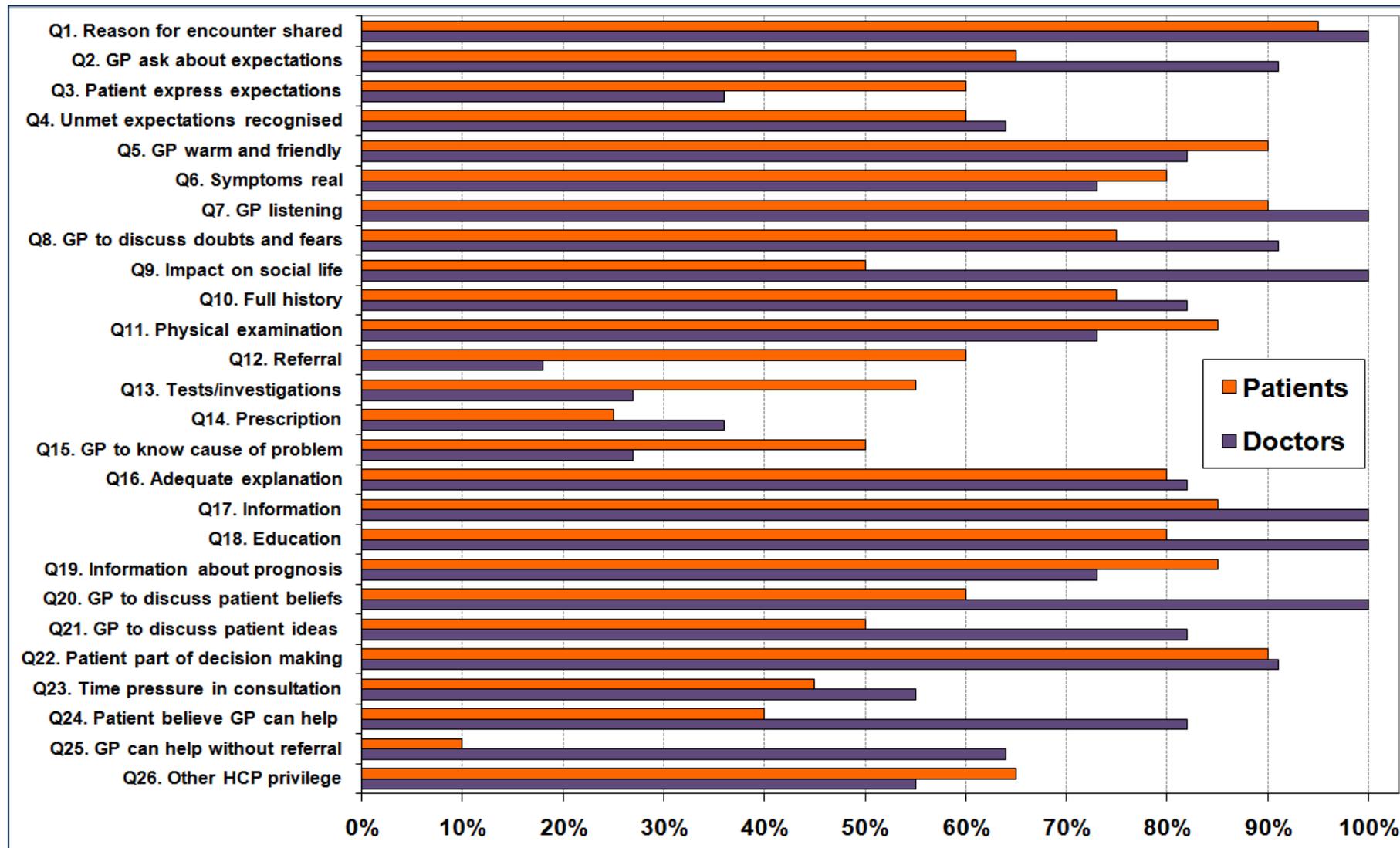
Figure 8 Patient-GP agreement as measured by the Expectations Questionnaire

4.2.4.4 Validity testing

Data from the feedback tool was analysed to test whether the questionnaire was acceptable by users (response rate), simple (percentage of participants able to fully and correctly complete the questionnaire), and brief (time taken to complete), which reflect the face validity of the questionnaire. Of the 30 patients, 16 GPs and 10 researchers, who were invited to participate, 20 patients, 11 GPs and 7 researchers agreed to participate with response rates of 67%, 69% and 70% respectively. All 38 participants were able to fully complete the questionnaires as required. The majority of GPs and researchers were able to complete the questionnaire in less than 10 minutes (91% and 86% respectively), while only two-thirds of the patients were able to complete it in 10 minutes with the remaining third completing it in 10-20 minutes.

The feedback tool showed that the questionnaire was perceived as simple, clear and easy to understand with agreement percentages of 85%, 91% & 86% respectively. Questions were perceived as appropriate to the intended aim stated in the questionnaire with 85%, 91% & 100% agreement respectively. Nearly everyone agreed that the items were familiar questions that most users will be able to understand and answer (85%, 91% & 100% respectively). Seventy percent of the patients, 91% of the GPs and 100% of the researchers perceived the questionnaire as useful, and filling it in as a worthwhile task. However, aspects of repetition and attractiveness of the questionnaire items scored low agreement (65% & 70% for patients, 73% & 73% for GPs and 100% & 71% for researchers respectively) (Figure 9). The free text fields conveyed useful messages about some questionnaire items and some suggestions about wording and re-formatting of some questions, which helped improve the questionnaire content and ensured acceptable face validity of the questionnaire.

Figure 9 Results of the validity testing tool
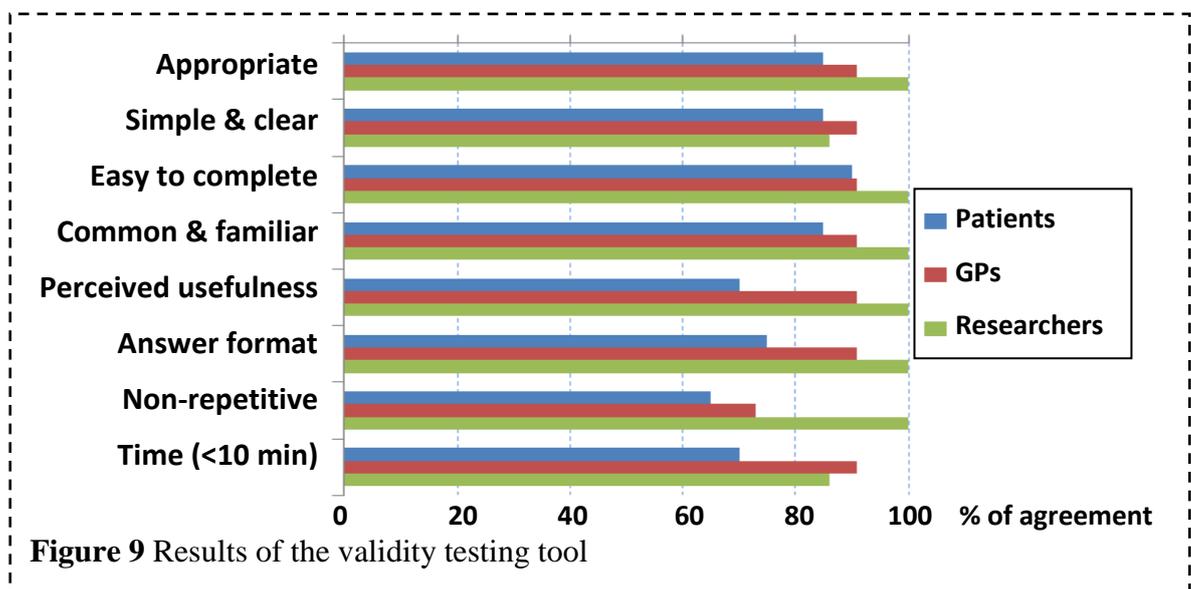
To test the construct validity of the questions as a good and valid measure of the construct of expectations, Spearman correlation coefficient was calculated for each item and the total expectations scores. Correlation coefficients were not significant for questions related to the reason for encounter [Q1], the genuineness of patients' symptoms [Q6], knowing the cause of the problem [Q15], ability of GPs to help without need for referral [Q25], and the privilege of other health care professionals over GP [Q26], where Spearman correlation coefficients (r) were 0.114, -0.02, 0.255, 0.169, and 0.219 respectively (Table 8). These questions did not correlate well with other items in the questionnaire as well as the total EQ. Spearman Correlation coefficients between patients' part of the EQ and the PIQ total scores were calculated to establish concurrent validity. Correlation was significant at 0.05, with correlation coefficient (r) of 0.65 and P value of 0.002.

Table 8 Correlation coefficients between each question and total expectations scores

Q.	1	2	3	4	5	6	7	8	9	10	11	12	13
r	.114	.621*	.360*	.632*	.503*	-.002	.297*	.504*	.623*	.559*	.551*	.286*	.427*
P	.248	.000	.013	.000	.001	.495	.035	.001	.000	.000	.000	.041	.004

Q.	14	15	16	17	18	19	20	21	22	23	24	25	26
r	.563*	.255	.363*	.539*	.355*	.453*	.705*	.567*	.507*	.455*	.338*	.169	.216
p	.000	.061	.013	.000	.014	.002	.000	.000	.001	.002	.019	.156	.0.96

* Significant correlation at 0.01, r – Correlation coefficient, P – Significance value

For testing the internal consistency of the questionnaire, Cronbach's alpha, which is a common measure of scale reliability, was measured at a value of 0.831. Correlation Coefficients were calculated if each item was deleted to determine what the value of alpha would be if that item was omitted. In other words, if the questionnaire is a reliable scale, then no question should cause substantial increase or decrease in alpha if it is deleted (Field, 2005). No specific question seemed to greatly affect the overall reliability (Table 9).

Table 9 Values of alpha if item was deleted

Alpha if item is deleted	1	2	3	4	5	6	7	8	9	10	11	12	13
	.832	.821	.827	.818	.825	.837	.829	.824	.820	.823	.821	.835	.821

Alpha if item is deleted	14	15	16	17	18	19	20	21	22	23	24	25	26
	.816	.830	.825	.821	.825	.822	.817	.820	.823	.825	.828	.837	.831

4.2.5 Discussion

The main aim of this section was to report on the EQ development and design and to discuss the results of the pilot study conducted to explore the practical use of the newly designed questionnaire, as well as to establish its validity and reliability. The following section will reflect on the questionnaire design, the validity and reliability of the tool, and the appropriateness of its use for the main study. In addition, it will discuss the pilot study findings and relate it to the main study hypothesis, i.e., the presence of a state of mismatched patient-GP expectations.

The patient-GP relationship is of paramount importance to a successful consultation. Patients have a wide variety of specific expectations for care that extends to both technical and interpersonal management (Kravitz et al., 1997). Such expectations are measurable, and can have potentially important clinical consequences (Kravitz, 2001). On the other hand, very little is known about GPs' expectations of the consultation. Despite the suggested importance of a state of matched (and not just met) patients' and GPs' expectations (Georgy et al., 2009), very few studies have investigated back pain patients' and GPs' expectations and the matching of these expectations . The general literature on the patient-GP relationship and expectations reveals that a patient-GP agreement regarding the nature of the problem, diagnostic and treatment plans are associated with better communication, higher satisfaction, adherence, symptom resolution and perception of improvement (Cedraschi et al., 1996; Liaw et al., 1996; Maly et al., 2002; Azoulay et al., 2005; Staiger et al., 2005). Mismatched GP's and patient's own diagnosis is believed to provoke a 'negative medical consultation' (Punamäki and Kokko, 1995). Studies are needed to address these issues by designing tools and approaches to investigate this important aspect of the patient-GP relationship, which prompted the need to conduct the current study to design a measurement tool of the matching of patient-GP expectations of the consultation.

4.2.5.1 Questionnaire design

With regard to the EQ, preliminary use of the tool suggests it to be simple, appropriate and acceptable to participants as reflected by the good response rate. The questionnaire is believed to provide a comprehensive representation of the range of back pain-specific expectations, as the participants were allowed to add any other expectations that were not reported in the questionnaire, but none did. Among the valuable feedback, captured in the free textbox, was a note from one of the GPs that the rating of the different items of the questionnaire would certainly be influenced by the

GPs' special interest and advanced training or specialisation in pain management. This might make the responses more likely to move in the positive direction, particularly when it comes to physical examination, explanation of the cause, education, referral and ability to help. This aspect was acknowledged and a specific question was included in the GPs' demographic data collection section enquiring about any specialised training or advanced skills in pain management to control for GP-to-GP differences in clinical knowledge and professional expertise.

The method of questioning chosen for each item (five-point Likert type scale) seemed relatively easy for participants to complete as reflected in the comments given in the free textbox sections. As expected, the 'neutral' response received a considerable amount of comments from participants. One GP reported that the neutral response might have been used more often due to the perceived degree of variability in back pain consultations, with each having a unique distinctive scenario according to the individualised characteristics of each patient. Another participant suggested replacing the 'neutral' response by 'not applicable', as he/she felt the 'neutral' response might jeopardise the questionnaire results. Despite the potential of being an easy escape option for participants, a 'neutral' response was felt appropriate for the current questionnaire in order to have a good representation of the aspects deemed significantly important for patients and GPs within the consultation without forcing them to agree or disagree with aspects that they see as somewhat important but not essential. A clear example of that would be the impact of back pain on the patient's social life and emotional well-being; this aspect might not be highly expected by patients during the consultation, but, if received, it might yet improve the outcome of the consultation.

The EQ item structure was investigated using descriptive statistics and tests for normality among the items to ensure a good factor structure and that no violations of design assumptions were evident (Devilly and Borkovec, 2000). Graphic representation of the pilot study results was used to explore the distribution and range of scores, and possible response patterns. A few items (e.g., Q17 and Q18 in the GPs' part of the EQ) have shown features of skewness, which is a lack of symmetrical distribution of scores about the mean (Baker, 1990; Grogan et al., 2000). However, evidence suggested that using questionnaires with closed ended questions and an ordinal rating scale in studies comparing patients' and GPs' attitudes and perceptions towards the consultation often lead to high scores, as participants tend to be very positive and would almost always give positive responses (Ahlen et al., 2007); so, this trend has been expected. An item

inter-correlation matrix was also constructed to explore the inter-correlation between the scale items, and has shown a significant degree of correlation, which reflects the ability of the questionnaire items to represent the construct of interest and established the questionnaire structure (Devilly and Borkovec, 2000).

The adopted data collection approach seemed convenient and appropriate. The invitation letters and information sheets seemed clear, comprehensive and appropriate for setting the stage. There were no problems with the use of the EQ as a self-administered tool. The methods of data organisation and storage used in the pilot study (e.g., spreadsheets, storage cabinets...etc) are deemed to be appropriate for use in the main study. The pilot study helped to confirm the adequacy of the measures put in place to address any ethical considerations related to completing the questionnaires, such as anxiety, concerns or other questions related to the back pain consultation or the patient-GP relationship. The statistical approach proved to be feasible and appropriate, and the set of outcome measures identified in this study seemed to be relevant and meaningful for answering the research questions. The statistical analysis package (SPSS 17) was appropriate for conducting all the required analyses. It was not possible, however, to test the statistical procedure that was going to be used in the main study to investigate the matching of patient-GP expectations. This is due to the fact that the statistical technique that was going to be employed in the main study (e.g., Kappa and Gwet coefficient of agreement) requires matched samples for pair-wise statistical analysis of the data, which was not available in the pilot study.

Another potential concern for the use of the EQ might have been the overlapping of some expectation items, but this was addressed in the validity testing part of the study, which investigated and discussed the content and construct validity of the questionnaire in order to address any clarity and repetitiveness issues. The pilot study provided valuable feedback from participants about the measurement tool content and design, which helped eliminate researcher bias in terms of item inclusion and helped refine the tool in terms of repetition, complexity, and wording of some items. This has ensured that the tool is comprehensible and appropriate, and that all questions are well defined, clearly understood and presented in a consistent manner, particularly important as the questionnaires would be self-administered (Lancaster et al., 2004). In general, participants' comments suggest the tool to be appropriate, not too lengthy to put subjects off and clearly presented with the questions being largely easy to understand with no undue repetition.

4.2.5.2 Discussion of the pilot study findings

In the following section, the findings of the pilot study will be discussed and related to the research questions and study objectives, as well as previous literature findings. Within the limitations of this pilot study, in terms of non-random purposive recruitment and small sample size, the results of the pilot study showed that diagnosis and explanation of the problem are the most valued expectations by all patients; this finding was also the same for GPs as to the explanation of the problem but not the diagnosis (rated fifth), which might constitute a major area of mismatch that could potentially affect the patient-GP relationship. This is in line with previous research suggesting the importance of diagnosis as the most valued expectation by patients (Jackson and Kroenke, 2001; Ruiz-Moral et al., 2007), as well as the significant mismatch between patients' and GPs' expectations in relation to the importance of definitive diagnosis (Allegretti et al., 2010). Interestingly, and in accordance with previous studies (Deyo and Diehl, 1986; Skelton et al., 1996; Zebiene et al., 2004), both the patients and GPs agreed that knowing the cause of the problem [Q15] is not a high priority compared to provision of adequate explanation of the problem. The perceived difficulty in identifying the cause of pain can be inferred from the following quotations captured from the free textbox section of the GPs' questionnaire:

> ***Dr A:*** *"I found the question about 'cause' difficult - I usually have a good idea if something is a simple mechanical back strain and I can then reassure the patient that I have found no evidence of serious disease - that they have not slipped a disc and that the hurt does not mean that their back is damaged. But I know that, while plausible and I hope helpful for patients, I cannot in honesty say that I actually know the true cause of the pain".*

> ***Dr B:*** *"...my expectations are rather to arrive at a shared understanding of the nature of the problem and exclude serious disease and unhelpful beliefs (red & yellow flags), ...my knowledge of the cause of the pain may account more to a confidence that it is not likely to indicate serious disease and the ability to give a plausible explanation without making a detailed and accurate diagnosis of the exact pathology".*

> ***Dr C:*** *"...I might know the reason but still not be able to make an accurate diagnosis without further tests (which are probably not indicated!)".*

This contradicts a previous study (McPhillips-Tangum et al., 1998), which stated 'knowing the cause of pain' as a principal expectation for back pain patients. However, it was noticed that diagnosis and cause of the problem are overlapping and are used interchangeably with no distinctive borders for each of them and they might better be understood in terms of another overarching expression or term such as explanation of the nature of the problem. Therefore, the results of the current pilot study actually suggest both diagnosis and cause as principal expectations for back pain patients.

Another area of mismatch could be inferred by combining the results of part 2 (ranking) and part 3 (expectations statements) of the questionnaire. Effective pain relief was ranked as third important for GPs, while referral was ranked as third for patients. Comparing patients' and GPs' expectations reveals that patients were less likely to expect their GPs to help with their pain [Q24], expected the need for referral to address the problem [Q25], and indeed expected more referrals during the consultation than GPs did [Q12]. This emphasises the fact that despite the GPs' attempts to challenge their clinical frustration with back pain management by trying to provide effective pain management without the need to make unnecessary referrals, patients do not think GPs would be capable of helping without referrals (McIntosh and Shaw, 2003), and about half of them would expect to be referred to a specialist (Jackson and Kroenke, 2001). Nevertheless, expectations for medications and tests are met more frequently than expectations for referrals (Keitz et al., 2007). Some GPs do not consider referring to physical therapy to be beneficial at all for back pain management, which could affect their referral behaviour and would cause unmatched expectations with their perspective patients, who expected to be referred (Schers et al., 2001).

The mismatch in the ranking of the reasons and objectives of the consultation is consistent with previous research suggesting a mismatch between patients' and GPs' beliefs about the role of GPs in general practice as well as patients' reason for visiting the GP (Ogden et al., 1997), and can be explained in light of the significant differences found between patients and GPs with regard to [Q1] expectations of sharing the reason for the encounter (U=60, P<0.05), and [Q3] patients' expression of their expectations (U=58.5, P<0.05). As reported in the literature, exploring and understanding patients' expectations and encouraging patients to voice them during the consultation might improve the clinical process of care, in terms of satisfaction (McPhillips-Tangum et al., 1998), and patient-GP interaction and communication (Kravitz et al., 1996; Little et al., 2004[b]). It is alleged that GP's recognition of patients' expectations would improve GP's

satisfaction with the consultation (Rao et al., 2004). Patients and GPs agreed about different aspects of the bio- and psycho- but not the social aspect of the GPs' management, where patients were less likely to expect the GP to explore the impact of back pain on their social life [Q9].

While no generalisation can be made, the findings of the pilot study underpin important issues that need to be addressed in order to achieve better patient-GP interaction and consultation outcome. This study would form a good foundation for future research aiming to investigate the matching of patient-GP expectations and the importance of this agreement, using proper sample size and more rigorous sampling techniques.

4.2.5.3 Discussion of the questionnaire validity and reliability

Patients have a wide variety of specific expectations for care that extend to both technical and interpersonal management (Kravitz et al., 1997). Such expectations are measurable, and can have potentially important clinical consequences (Kravitz, 2001). Likewise, GPs' expectations could affect the consultation process and outcome; however, little is known about GPs' expectations, apparently due to lack of valid measurement tools. Measurement is a very important aspect of research. Research has always been striving for implementing valid and reliable measurement tools. The following section discusses the findings of the validity and reliability testing of the EQ.

✦ *Content validity*

A content-valid measurement tool would specify all the underlying dimensions of that domain and would be constructed in a way to reflect the meaning associated with each dimension and each sub-dimensions in a testable way (Carmines and Zeller, 2003). A clear definition of the expectations domain was a prerequisite for determining the current questionnaire content; this seemed difficult as there were no definite relevant dimensions that can be used to specify the construct of expectations. Reviewing the literature showed that expectations are varied and conceptualised in various ways and there is inconsistency in defining expectations.

Testing the content validity of the EQ commenced with an extensive literature review to reach a definite distinguishable definition of expectations and to define the underlying dimensions. As outlined earlier in the thesis (page 27), expectations are defined as 'what the individual anticipates will happen' (reflecting expectations), rather than 'what he/she wishes or wants would happen' (reflecting desires). A precise

definition of expectations seems to be a minimal prerequisite for developing a valid measuring tool for this aspect to avoid its confusion with other associated terms, for example, desires or requests.

Expert judgement by means of continuous discussions with patients, GPs and researchers helped refine, modify and rephrase the questionnaire items several times before version 5 of the questionnaire was suggested to have a substantial degree of content validity (review section 1.2.1; page 2). To achieve content validity, it was necessary to base the items in the questionnaire on the whole specific range of expectations that patients in this particular illness group have identified (Staniszewska and Ahmed, 1999); content validity of the EQ was provided by the continuous discussions in which patients and GP identified their expectations of the consultation. Piloting of the questionnaire also provided a validity check as participants were asked to add any further expectations which might have not been included in the questionnaire.

✦ *Face validity*

Face validity simply assesses the extent to which the items of a specific measurement tool appear relevant, important, and interesting to the participant (Collins et al., 2006); however, as the judgment about the appropriateness of the instrument is made by inspection only, with little or no reference to any other kinds of information, therefore, if the person is a real novice, with respect to either the content or knowledge about measurement, then the usefulness of face validity judgments will be minimal (Roberts, 2000). Accordingly, researchers, with considerable amount of expertise and knowledge, were used as a subgroup for testing the validity of the questionnaire, in addition to the patients and GPs subgroups.

The feedback survey (validity testing tool) used by participants to comment on different aspects of the EQ provided valuable data that helped ensure good face validity of the EQ as perceived by its prospective users. All participants were able to fully complete the questionnaire as required, which indicates that the questionnaire was well received by users. This was confirmed by an average of 92% of participants agreeing that the questionnaire was simple, clear and easy and that all items are common and familiar questions that most users will be able to understand and answer. An average of 87% of responses indicated that the questions are appropriate to the intended aim of the questionnaire. On the other hand, less agreement was obtained among patients than GPs regarding the perceived usefulness of the questionnaire; this may be attributed to a state

of frustration that was noted in most of the patients' comments and was a consistent message across a few responses about patients' dissatisfaction with the GPs' management of their back pain. Similarly, lower scores of agreement were obtained regarding the repetition and attractiveness of the items (79 % and 71% respectively); these issues were addressed in version 5, as all items were reviewed for any repetition or ambiguity. The majority of participants were able to complete the questionnaire in less than ten minutes, which is considered a good administration time, putting in mind the current situation, where most GPs are fully loaded and the time factor plays a vital role in determining GPs' response rates to surveys. Accordingly, version 5 of the EQ can be assumed to have outstanding face validity.

✦ *Construct validity*

Construct validity was investigated to explore how well the items represent the construct of expectations by calculating the correlation coefficients between each item and the total expectations scores. If the scale is to be of good construct validity, items should be assumed to correlate significantly with the total score, which reflects the construct of interest. As mentioned before in Table 8 (page 72), correlation coefficients were not significant for five questions. Possible reasons for this low correlation are discussed hereby.

Questions about the reason for encounter [Q1] and the ability of GPs to help without need for referral [Q25] are thought to overlap with questions about the GP asking about patients' expectations [Q2] and patients' beliefs that GPs can help with their pain [Q24], which might have created some confusion and repetition that affected the statistical analysis of the results. The question about the genuineness of patients' symptoms [Q6] seemed to negatively correlate (r= -0.02) with the total score and thus it is assumed that it does not reflect or represent the construct of expectations. Question 15 (cause of the problem) is asking about a vague and questionable area of patients and GPs' expectations, as there is agreement among both sides that reaching a definite cause of the pain is not expected and an adequate explanation of the problem is a more realistic and achievable expectation (which is covered in Q16). Finally, the item asking about other health care professionals' privilege over GPs [Q26] did not correlate significantly with the total score, which again suggests that it might not be a relevant representation of the construct of expectations. Consequently, all five questions were removed from the final version of the questionnaire to enhance construct validity.

✦ *Concurrent validity*

Concurrent validity investigates the extent to which scores on one instrument relate to those of another validated tool, where both were administered on the same occasion (Collins et al., 2006). Concurrent validity was established for the patients' part of the EQ by correlating the total scores of the EQ and the PIQ. Spearman correlation coefficient between the total scores showed significant correlation (page 72), which confirmed and established an acceptable degree of concurrent validity. This was not possible for the GPs' corresponding part of the EQ due to lack of a comparable measurement tool. More value could have been added if we were able to measure the discriminate validity (the degree to which the measurement tool is not similar to other measures that it theoretically should not be similar to), especially with the availability of several satisfaction questionnaires. However, this was beyond the focus of the study.

✦ *Internal Consistency*

Cronbach's alpha was used to test the internal consistency of the instrument by computing the average correlation coefficient for every possible way of splitting the data, with values of 0.7 or higher indicating acceptable scale reliability (Field, 2005). Cronbach's alpha for the questionnaire was 0.831, which indicated a good degree of internal consistency. Further statistical analysis of the data showed that no single item seemed to affect the overall reliability of the questionnaire if this specific item was deleted, therefore, the questionnaire was deemed to be of considerable reliability for measuring expectations. Besides, a test-retest approach was implemented in the main study (Chapter 5) for further analysis of the questionnaire reliability.

As proposed by Kravitz (1996), a valid and reliable measurement tool of expectations should take into consideration a set of distinctive characteristics including the content (structure, process or outcome), specificity (overall versus visit-specific and general versus condition-specific), and timing (pre-visit, post-visit or unstated) as well as the mode of communication (implicitly or explicitly communicated to the GP).

The proposed questionnaire relates to the suggested taxonomy in various ways; the EQ was designed so that it is condition-specific and bearing directly on measuring back pain-specific expectations. Based on an extensive review of the literature, the EQ incorporates several items that cover both the process and the outcome of the health care service typically provided within back pain consultations in primary care. The EQ emphasises the implicit nature of expectations (i.e., non-verbally communicated

expectations), as well as the importance of assessing the expectations in terms of the specific visit, attributed to the acknowledged complexity of the process of expectations formation and the several predisposing factors influencing its development. It is possible that the EQ can be used pre-visit to help GPs explore the range of patients' expectations as well as post-visit to monitor the meeting of these expectations and the matching of those expectations with GPs' expectations.

Based on these testing procedures, the content, face, construct, and concurrent validity as well as the internal consistency of the new instrument were demonstrated reflecting the extent and degree to which the construct of expectations was successfully and accurately translated into a measurable, functional, and operational form using version 5 of the EQ [21 items] (Appendix 5).

4.2.6 Summary

To date, research studies aiming to explore the congruency of patient-GP expectations are lacking, apparently due to the lack of valid measurement tools. A questionnaire that measures congruency and agreement of patients' and GPs' expectations would enable better understanding of the impact of matched expectations on different aspects of the consultation. The newly designed EQ seemed to be an appropriate and acceptable tool, with good face, content and construct validity, as well as good internal consistency, and thus can be used as a valid and reliable measure for back pain-specific expectations.

Within the limitations of this pilot study, in terms of the small sample size and purposive sampling approach, the findings showed that diagnosis, explanation of the problem, and referrals are the most valued expectations by patients; while explanation of the problem, effective pain relief, and information provision where the most common expectations reported by GPs. The study reveals some areas of mismatch that could adversely affect the outcome of the consultation. Patients' and GPs' expectations were in agreement for most aspects of the consultation except in relation to referrals, ability of GP to help without the need for referrals, as well as items related to sharing the reason for the encounter and expression of expectations. Patients and GPs agreed that GPs' interpersonal and communication skills are very important and that explanation of the problem is more important than identifying the cause. Further research is needed to explore the matching of patients' and GPs' expectations using a larger sample size, as well as to investigate the importance of matched expectations on different aspects of the consultation.

4.3 Main study - Mixed methods design
4.3.1 Introduction

Progress in almost every field of science depends on the contributions made by systematic research; thus research is often viewed as the cornerstone of scientific progress (Marczyk et al., 2005). By definition, according to the Merriam-Webster Dictionary, scientific method is a body of principles and procedures for the systematic pursuit of knowledge involving the recognition and formulation of a problem, the collection of data through observation and experiment, and the formulation and testing of hypotheses. In the most elementary sense, the purpose of research is to answer questions and acquire new knowledge (Marczyk et al., 2005).

Every research study should have a well-planned and well-designed structure that will serve as the backbone for collecting and analysing the data. Broadly speaking, a research design is a logical outline of the steps and phases of the research study that eventually help relate the study findings to the initial research questions as well as guide the final conclusions. The research design provides a rigorous framework that relates methodology to methods of data collection and analysis. According to Cohen, Manion and Morrison (2000; p.44), the term 'methods' means the set of research approaches used to gather data for purposes of inference, interpretation, explanation and prediction; while 'methodology' refers to the philosophy or general principle that guides the research by providing an overall approach to studying the topic as well as outlining issues such as the constraints, dilemmas and ethical choices within the research (Dawson, 2002; p.14).

4.3.2 Methodology of the main study - A mixed methods design
4.3.2.1 Introduction

Using a mixed methods approach, the objectives of the main study were to (1) investigate the matching of patient-GP expectations of the back pain consultation in primary care, and (2) explore the perceived importance of this matching on different aspects of the consultation. Along with quantitative and qualitative research, mixed methods research is becoming increasingly articulated and recognised as the third major research approach or research paradigm (Johnson et al., 2007). Perceived as a logical and intuitive bridge between the quantitative and qualitative paradigms, an increasing number of research studies have adopted the use of mixed methods research design (Onwuegbuzie and Leech, 2006).

4.3.2.2 Background

Traditional research approaches comprise qualitative and quantitative designs. Qualitative research explores attitudes and experiences using methods such as focus groups or interviews in an attempt to get an in-depth exploration of participants' opinions (Dawson, 2002). Quantitative research answers the research questions through the generation of statistics that can be tested empirically by direct observation and experimentation (Marczyk et al., 2005). Qualitative research involves different methodologies including phenomenology, ethnography, action research, grounded theory, conversation analysis, discourse analysis and cooperative inquiry (Holloway and Wheeler, 1996; Krahn and Putnam, 2005; Marczyk et al., 2005). Conversely, quantitative research designs might fall into one of three general categories: experimental, quasi-experimental, and non-experimental (descriptive and correlational designs) (Marczyk et al., 2005).

Ideally, the research questions would drive the choice of the methodology, which in turn will inform the research design. According to Holloway and Wheeler (1996; p.10), "the methodology – the underlying rationale and framework of ideas and theories – determines approaches, methods and strategies to be adopted". In the current study, the nature of the research questions, which is the exploration of a new topic that has not been previously researched and that is based on a subjective assumption of its importance, has imposed the need for a mixed methods design that can probe the topic of matched expectations and its assumed importance using an integrated quantitative and qualitative approach.

4.3.2.3 Definition

Mixed methods research is the type of research in which elements of qualitative and quantitative research techniques, methods or concepts are combined for the broad purposes of breadth and depth of understanding and corroboration (Johnson and Onwuegbuzie, 2004; Johnson et al., 2007; Onwuegbuzie and Collins, 2007). Mixed methods research involves collecting, analysing, and interpreting quantitative and qualitative data in a single or series of studies that investigate the same underlying phenomenon (Onwuegbuzie and Leech, 2006). Its logic of inquiry includes the use of induction (discovery of patterns), deduction (hypotheses testing), and abduction (uncovering and presenting explanations for understanding results) in an attempt to legitimate the use of multiple approaches in answering the research questions, rather than restricting researchers' choices (Johnson and Onwuegbuzie, 2004). In the current

study, adopting a mixed methods design had the advantage of utilising a qualitative portion to explain and complement the findings from the quantitative part (Onwuegbuzie and Leech, 2004). Moreover, the inclusion of quantitative data helped compensate for typical issues of generalisability associated with qualitative research (Onwuegbuzie and Johnson, 2004 in; Onwuegbuzie and Leech, 2004).

4.3.2.4 Purpose and rationale

Mixed methods research is positioned between quantitative and qualitative research and is viewed as a middle solution that respects the wisdom of both approaches while trying to overcome common problems that face each of these research designs (Johnson et al., 2007). The main aim for using mixed methods approach in the current study was to provide clarification and explanation of the analysed data and the findings of the quantitative part through conducting a qualitative part. In other words, the mixed methods approach sought more elaboration and better understanding of the quantitative data regarding the matching of patient-GP expectations by means of a subsequent qualitative part that investigated the perceived importance of this matching for a successful back pain consultation.

The literature suggests five main purposes for mixed methods research design: triangulation, complementarity, development, initiation, and expansion (Greene et al., 1989). While triangulation is concerned with convergence and consistency of results from different methods, complementarity seeks elaboration, enhancement and clarification of the results from one method with the results from another (Greene et al., 1989). Development is mainly focusing on the use of the results from one method to help develop or inform the other method; initiation seeks the discovery of paradox and contradictions that would lead to reformulation of the research question; finally, expansion aims to expand the breadth and range of research by using different methods for different inquiry components (Greene et al., 1989). The main purpose of implementing a mixed methods approach in this study was complementarity of the findings by means of integrated analysis of the quantitative and qualitative data. Complementarity is one of the most frequently cited primary rationales for mixed methods research (Bryman, 2006).

Some authors see the integration of quantitative and qualitative methods as more problematic than is often assumed, owing to the lack of rationale for combining or the difficulties of combining qualitative and quantitative findings (Bergman, 2008 in;

Maxwell, 2009). The fundamental issue of the degree to which mixed methods researchers genuinely integrate their findings has not been significantly addressed in the literature (Bryman, 2007). The majority of previous mixed methods research studies did not genuinely integrate the quantitative and qualitative data (Greene et al., 1989; Bryman, 2006 & 2007), which suggests that the quantitative and qualitative components might have been treated as separate domains (Bryman, 2007). Researchers may tend to give greater attention to one component than the other or to present the findings in parallel with no integration of these findings (Bryman, 2007).

In the current study, integrated analysis of the data was vital for several reasons. The quantitative phase of the study assumed that a state of matched patient-GP expectations would be in favour of a more successful consultation, and so aimed at exploring this matching. The qualitative phase tested this subjective assumption through investigating the perceived importance of the matching as reported by patients and GPs, and therefore, validated the purpose and hypothesis of the quantitative phase. The findings of the quantitative phase would make no sense without careful interpretation of the qualitative data. This qualitative part would provide the infrastructure to support the findings of the quantitative phase and would offer clinical significance to the assumption that a state of matched patient-GP expectations could potentially influence the consultation. The quantitative and qualitative phases were complementary and the data from both phases was fully integrated in a way to enhance the understanding of the topic of matched patient-GP expectations and the importance of this matching.

4.3.2.5 Structure

Several frameworks and models were developed to provide rigour and structure for mixed methods design. It was suggested that a strong mixed methods study should demonstrate the need/rationale for the design to answer the research questions, incorporate interconnected qualitative and quantitative components, present distinctly identifiable qualitative and quantitative data that are integrated to reach some coherent conclusions or inferences that are more comprehensive and meaningful than those of the qualitative or quantitative strands (Tashakkori and Creswell, 2007). Applying these previous guidelines to the present study, the main rationale for adopting a mixed methods design was a lack of relevant and appropriate quantitative measures of the importance of matched patient-GP expectations. The present study argued that satisfaction and quality of life might not serve as good measures of the importance of matched expectations. Quality of life might not be a good measure due to the presence

of many confounding factors that may affect the link between matched expectations and better quality of life related to the consultation, for example, pain severity and chronicity. Likewise, the theory that fulfilment of expectations is linked to higher level of satisfaction is not fully supported by the literature and many recent studies were not in favour of this hypothesis, suggesting a lack of association between higher satisfaction and fulfilled expectations. A mixed methods approach was then the design of choice in order to explore the potential aspects of the consultation that might have been affected by having matched expectations. Conducting a pair-wise matched quantitative data analysis, together with a subsequent further exploration of the perceived importance of this matching by means of patients' and GPs' interviews, and integrating the two sets of data, provided clear and distinct answers to the stated research questions. This pragmatic approach is becoming more accepted within different research disciplines (Onwuegbuzie and Leech, 2006) and it was found to be the most appropriate for finding the best answers to the research questions addressed in this study.

4.3.2.6 Typology

Mixed methods research embraces four families of mixed methods designs: concurrent, conversion, sequential, and fully integrated (Teddlie and Tashakkori, 2006). Concurrent design involves conducting parallel quantitative and qualitative components in the same time. Conversion is when one type of data (e.g., QUAL) is gathered and then transformed and analysed using the other methodological approach (quantitised) (Teddlie and Tashakkori, 2006). Conversely, there are three types of sequential designs: explanatory, exploratory, and transformative (Hanson et al., 2005). Sequential designs answer exploratory questions chronologically in a pre-specified order (Teddlie and Tashakkori, 2006), and are particularly useful for explaining relationships or study findings (Hanson et al., 2005). More specifically, and to reflect on the current study design, the sequential explanatory design, which was chosen for this study, involves collecting and analysing quantitative data followed by qualitative data, with priority usually given to the quantitative data. Qualitative data are used mainly to augment quantitative data with data integration usually taking place at the interpretation and discussion stage (Hanson et al., 2005).

In addition, quantitative dominant and qualitative dominant mixed methods are symbolised as QUAN+qual and QUAL+quan research respectively (Figure 10), whereby qualitative data and approaches are incorporated into otherwise quantitative research projects and vice versa (Johnson et al., 2007).

Time Orientation   Relationship of Samples

Concurrent:

QUAL + QUAN
QUAL + quan
qual + QUAN
qual + quan

Identical

Parallel

Nested

Multilevel

Sequential:

QUAL → QUAN
QUAL → quan
qual → QUAN
QUAN → QUAL
QUAN → qual
quan → QUAL

Identical

Parallel

Nested

Multilevel

Notation:

"qual"= qualitative

"quan"= quantitative

"+"= concurrent

"→"= sequential

capital letters= higher

priority; lower case

letters= lower priority

Figure 10 Two-dimensional mixed methods typology for sampling and data collection procedures (Onwuegbuzie and Collins, 2007).

4.3.2.7 Steps of a mixed-methods design

The mixed methods research process comprises eight distinct steps: (a) determine the research question; (b) determine whether a mixed design is appropriate; (c) select the mixed method research design; (d) collect the data; (e) analyse the data; (f) interpret the data; (g) legitimate the data; and (h) draw conclusions (Johnson and Onwuegbuzie, 2004). A strong mixed methods study should start with a strong mixed methods research question or objective (Tashakkori and Creswell, 2007).

While sampling decisions can be difficult for both qualitative and quantitative researchers, they are even more complex for studies in which qualitative and quantitative research approaches are combined either concurrently or sequentially because sampling schemes must be specifically designed for both components of the study (Onwuegbuzie and Collins, 2007). The current study adopted a combination of homogenous/purposive non-random sampling scheme (for the QUAN phase), that is, choosing settings, groups, and/or individuals based on similar or specific characteristics, as well as convenience non-random sampling scheme (for the qual phase), which is choosing settings, groups, and/or individuals that are conveniently available and willing to participate in the study. Using non-random samples for both the quantitative and qualitative parts is by far the most common combination of sampling schemes in mixed

methods designs, regardless of the mixed methods research questions, aims, objectives or purpose (Onwuegbuzie and Collins, 2007).

A purposive sample is typically designed to pick a small number of cases that will yield the most information about a particular phenomenon and thus maximises understanding and gives insights into this aspect of interest; whereas a probability sample is planned to select a large number of cases that are collectively representative of the population of interest aiming for generalisability of the findings to the population from which the sample was drawn (Onwuegbuzie and Collins, 2007; Teddlie and Yu, 2007). Both purposive and probability sampling, however, are designed to provide a sample that will answer the research questions while taking into consideration, to some extent, the issues of generalisability in terms of transferability (generalisability of results in a qualitative study from one specific sending context to another receiving context) or external validity (generalisability of results from a quantitative study to other populations or settings) (Teddlie and Yu, 2007).

The current study adopted a nested design to identify the sample for each of its two components (QUAN-qual). Nested design is a sampling approach where the sample from one phase represents a subset of the sample from the other phase of the study (Onwuegbuzie and Collins, 2007). Other sampling designs include parallel (different samples drawn from the same population of interest), identical (same sample for both phases), or multilevel (using two or more sets of samples that are extracted from different populations) (Onwuegbuzie and Collins, 2007).

4.3.2.8 Summary

For the stated aims and objectives of the current study, it was felt that a mixed methods sequential exploratory design would provide an appropriate model for researching the matching of expectations and the perceived importance of this matching. None of the two traditional research designs - the quantitative or qualitative research - can stand alone in answering the current study research questions, but combined, with proper integration of the two sets of data, a stronger model was implemented that provided distinct answers to the research questions. Mixed methods research recognises the importance of traditional quantitative and qualitative research but also offers a powerful third paradigm choice that can provide the most informative, balanced, and useful research design for the current study to help address its stated aims and objectives in the best possible way (Johnson et al., 2007).

4.3.3 Methods of the main study - A mixed methods design

4.3.3.1 Research design

A mixed methods (QUAN-qual) sequential nested design was chosen for the main study (highlighted in Figure 10, page 88). A dominant cross-sectional correlational quantitative phase was designed to compare case-matched groups (patients and GPs). Using a homogenous non-random sampling scheme, a matched sample of patients and GPs were given the EQs in an attempt to measure the matching of their expectations in a descriptive-correlational manner. This was followed by a sequential, less dominant, qualitative phase, where a sub-sample of the same initial group (nested) participated in recorded semi-structured telephone interviews to explore their perceptions of the importance of matched expectations for a successful back pain consultation.

As the research was exploratory in nature, a QUAN-qual model was chosen, so that the matching of patients' and GPs' expectations would be gleaned from the more dominant quantitative component of the mixed methods study, whereas the perceived importance of this matching would be extracted from the qualitative portion of the inquiry. Furthermore, the combined analysis of the data from the quantitative and qualitative components was used for the purpose of complementarity of the findings from the QUAN and qual strands, in order to fully explore the potential importance of such matching on different aspects of the consultation (Onwuegbuzie and Leech, 2004). Sequential designs are deemed appropriate if the mixed methods purpose is complementarity of the findings (Onwuegbuzie and Collins, 2007).

4.3.3.2 Context and setting

The first point of contact for advice for a considerable number (about fifth) of patients experiencing an episode of back pain would be their general practitioner. Back pain is one of the most common health problems presenting in general practice. The essence of back pain care in general practice is the consultation, which is viewed as a process of negotiation between the patient and GP, geared towards information, advice or specific care (Georgy et al., 2009). The medical consultation serves three main functions: build a relationship, collect data and agree on a management plan (Gask and Usherwood, 2002). The current study aimed to investigate the matching of back pain patients' and GPs' expectations of the consultation in primary care and the perceived importance of this matching. The study targeted all GPs from all general practices in one Primary Care Trust in the South of England.

4.3.3.3 Sample

➔ *Sampling approach*

The current study adopted a combination of homogenous/purposive non-random sampling scheme (for the QUAN phase), that is, choosing settings, groups, and/or individuals based on similar or specific characteristics, as well as convenience non-random sampling scheme (for the qual phase), which is choosing settings, groups, and/or individuals that are conveniently available and willing to participate in the study.

➔ *Sample size calculation*

Choosing a sample of appropriate size is essential to ensure proper representation of the population as well as making sure the study has the power to identify significant differences or effects from the set of collected data in order to get meaningful results that reflect the target population as precisely as needed (Kadam and Bhalerao, 2010). Ideally, sample size should be large enough to allow for adequate valid inferences about the population to be made. A sample should not be too small such that it lacks precision and thus fails to detect significant effects and provide reliable meaningful answers to the research questions, or too large that it unnecessarily wastes the researcher's and participants' time and resources often for minimal gain (Al-Subaihi, 2003). There are several factors that would influence the sample size, including confidence interval (*CI*), confidence level (*CL*), degree of variability (*DV*), research design and population size (Al-Subaihi, 2003).

The *CI* is the margin of error and is represented by lower and upper limits within which the mean value would be expected to fall (Field, 2005). It is a value that represents the probability that the sample contains the parameter of interest and is expressed as percentage such as 90%, 95% or 99% (Al-Subaihi, 2003). Typically, a *CI* of 95% is adopted by most Social Sciences researchers (Field, 2005). Likewise, the *CL* is expressed as a percentage that represents the researchers' level of certainty that the subjects would choose a specific answer that falls within the *CI*. For example, a *CL* of 95% means that the researcher is 95% sure that the true answer would fall within the lower and upper bounds of the confidence interval. The *DV* is the response distribution or response agreement of the subjects, which is expressed as the percentage of subjects choosing a particular answer. The *DV* of the parameter being measured has a direct relationship with the sample size, i.e., the higher the *DV*, the larger the sample size that is needed and vice versa, with 50% *DV* requiring the largest sample size since it reflects the highest variability in the population (Al-Subaihi, 2003).

The main considerations when calculating the sample size are the research design and the intended statistical analysis procedures. Typically, sample size calculation for research designs using inferential statistics (e.g., t-test, analysis of variance or regression) is a straightforward process as power calculation would be employed and carried out using one of the many available statistical packages in order to identify how large the sample should be to ensure accurate and reliable detection of the minimum expected difference (Al-Subaihi, 2003). This is not the case for studies using descriptive statistics, e.g., mean and proportion, for the statistical power cannot be used because this concept only applies to statistical comparisons (Eng, 2003). In these types of studies, known as descriptive studies, calculating the sample size would influence the degree of precision of the study with the minimum expected difference rather reflecting the difference between the lower and upper bounds of the *CI* within which the observed means or proportions are expected to be (Eng, 2003). In this case, sample size calculation could principally be worked out using a computer software program and using *CI*, *CL*, *DV* and population size (Al-Subaihi, 2003).

➔ *Target sample size*

Using a web-based sample size calculator (Raosoft, 2004), a target sample size of at least 221 patients was required for the main study to accurately (95% *CI*) represent a variable with estimated 71% response distribution in a population of 20,000 individuals (Appendix 8). The Raosoft® sample size calculator uses the CI, CL, DV and population size to calculate the appropriate sample size. This tool has been used in other studies to estimate and plan the sample size, and was proven to be accurate and convenient (Bruijns et al., 2008; Halkett et al., 2010; Pai, 2010).

As recommended, a *CI* of 95% and *CL* of 90% were adopted for the current study (Field, 2005). The *DV* was calculated from the pilot study results (Bartlett et al., 2001) as the percentage of response agreement among participating patients, which reflected the degree of variability within the response distribution (for example, response distribution for patients was 71%, i.e., on average, 71% of the subjects agreed on a specific answer for each of the questions). The specific population size was estimated at 20,000 subjects based on the following prevalence data: It is estimated that up to one third of the UK population will experience back pain during the course of a year, with about 20% (1 in 15) consulting their GPs for this pain (Savigny et al., 2009). Given that the general population size of the geographical area that is being investigated in the current study is about 300,000 (National Statistics Office, 2007), it would be

expected that 100,000 subjects (one third) would experience back pain during the course of the last year; of whom, 20,000 (20%) will consult their GP. Therefore, it was estimated that the target population size is 20,000 subjects.

For a sample size of at least 221 patients, and based upon a review of the literature pertaining to GPs' participation in research involving patient recruitment, a sample size of 25 GPs was planned, so that each GP would be required to recruit up to 10 patients making a total of up to 250 patients. From a statistical point of view, although most researchers recommend a *CI* of 95% for the sample to be a good representation of the target population, it was suggested that a higher minimum expected difference (*CI* for descriptive studies) might be used, especially if the planned study is preliminary or exploratory in nature (Bartlett et al., 2001; Eng, 2003). Therefore, a *CI* of broader width, for example, 85% was deemed appropriate for statistical calculation of the GPs' sample size, due to the preliminary exploratory nature of the study and owing to the fact that the concept of matched patient-GP expectations has not been previously addressed in the literature. This is in addition to the previously reported difficulties in getting GPs to participate in research studies, which was considered as a main barrier for designing the study with more precision and power in terms of GPs' sample size.

Using a *CI* of 85%, C*L* of 90%, *DV* of 77% (calculation made based on the results of the pilot study) and population size of 419 subjects (all GPs in the specified Primary Care Trust), GPs' sample size was estimated at 21 doctors. Based on the statistical sample size calculation, anticipated recruitment challenges and providing for dropouts, the final intended sample size for patients and GPs was decided at 25 potential doctors; each would be recruiting up to 10 back pain patients, making a total of up to 250 participants.

◆ *Actual sample size*

Ideally, it was planned that 25 GPs and 250 patients would be recruited for the study. Due to difficulties in recruitment of GPs for the study, only a total of 11 GPs and 57 patients participated in the QUAN part of the study. For the qualitative part, six patients and six GPs participated in the telephone interviews. Convenience sampling scheme was used to recruit for this phase as patients and GPs were readily available from the previous QUAN phase (nested sample) and were willing and/or agreed to participate in further discussion via the semi-structured telephone interviews. Further discussion of the recruitment approach and challenges is reported in Chapter 6.

→ *Selection of subjects: Inclusion and exclusion criteria*

Patients and GPs from both sexes were included. Eligible GPs were those involved in direct patient care for at least 20 hours per week in general practice. Eligible patients were those who have had a recent consultation for their back pain, with no radiation of pain beyond buttock, no evidence of nerve root involvement, no inflammatory disorder or spinal surgery; these criteria were used to identify a group of patients whose back pain was reasonably typical of that managed in general practice (Skelton et al., 1995[a]). All patients were over 18 years and had not been involved in other back pain studies in recent years.

Exclusion criteria included patients with a history of diagnosed mental disorder, dementia, psychosis, drug abuse, pregnancy, infectious diseases, severe disabling back pain, signs and symptoms of nerve root pain, or a progressive co-morbidity such as cancer (Skelton et al., 1995[a]; Hermoni et al., 2000; Pincus et al., 2000; Ahlen et al., 2007). These exclusion criteria were imposed to obtain a sample of subjects of considerable homogeneity and exclude those patients who might not be representative to the general back pain population, i.e., those who were not able to express their expectations accurately (due to dementia or drug abuse), those with expectations that might have been complicated by other co-morbidities (e.g., mental disorder, psychosis or cancer), or those experiencing back pain due to other reasons not representative of the typical back pain population (e.g., pregnancy or nerve root entrapments).

4.3.3.4 Data collection and data analysis approaches
1. For the quantitative part (QUAN)
→ *Quantitative data collection procedure*

A list of the contact addresses of all GPs within one Primary Care Trust in the South of England was obtained and a total of 419 GPs were identified. Information packages consisting of an invitation letter, information sheet and sample questionnaire (appendices 4 & 5) were sent to all GPs informing them of the study purpose and asking them to indicate on a reply slip whether or not they wished to participate. This helped to distinguish GPs who were not interested from those who did not reply, so that a systemic follow up process could continue. GPs who did not respond were followed up by two consecutive reminders, with a six week interval in between.

Respondents who agreed to participate were sent a package containing 15 patients' expectations packs, each consisting of a patient EQ, an information sheet and a pre-paid self-addressed envelope, to be given to up to ten eligible patients attending the

consultation for their back pain. If the patient agreed to participate, they would complete the questionnaire and return it in the pre-paid, self-addressed envelope. After eight weeks from starting to recruit, participating GPs were sent reminders (Appendix 10) informing them of the recruited number of patients up-to-date in the form of bi-weekly recruitment updates via emails and post for around twelve weeks, followed by weekly reminders for the rest of the recruitment period, which took place from September 2009 until April 2010. Five more patient packs were sent to each GP along with one of the reminders just in case they ran out of questionnaires. At the end of the specified period for patient recruitment, GPs were given a separate questionnaire, with questions matching those of the patients, to be completed and mailed in the pre-paid envelopes. A total of 7 GPs completed the EQ twice, with a 4 week gap in-between to investigate the test-retest reliability of the questionnaire using the Intra-class Correlation Coefficient (Shrout and Fleiss, 1979).

Quantitative data analysis methods

All questionnaires were anonymously coded and matched for pair-wise statistical analysis of the data in order to investigate the agreement between patients' and GPs' expectations. The five-point Likert scale was dichotomised as 'agree' (responses 4, 5) or 'disagree' (responses 1 to 3) with the statement (Ahlen et al., 2007). Descriptive statistics (mean, range, confidence intervals and percentage) were used to present the range of patients' and GPs' expectations and the agreement scores with each expectations statement. Using the dichotomised scale, each expectation item was then analysed according to the level of agreement between each patient and his/her corresponding GP using two different indices of agreement: the Kappa coefficient of agreement (K) (Cohen, 1960) and Gwet's agreement coefficient (AC_1) (Gwet, 2010).

Proportion of overall agreement (P_o), i.e., the overall percentage of cases when both patients and GPs jointly agreed or disagreed with the item, was calculated for each expectation statement using the following equation: $P_o = (A+D)/n$, where A is the total number of cases when they both agreed, D is the total number of cases when they both disagreed, and n is the total number of pairs. In addition, the more specific indexes of proportional agreement for the two responses 'agree' (P_{pos}) and 'disagree' (P_{neg}) were also calculated (Cicchetti and Feinstein, 1990). P_{pos} is the number of cases when both - patient and GP- state that they agree with the statement compared to the number of cases when either the patient or GP agree with the statement (Ahlen et al., 2007); conversely, P_{neg} represents the opposite case. The following equations were used to

obtain the indexes of proportional agreement: $P_{pos}= 2A/(2A+y)$ and $P_{neg}= 2D/(2D+y)$, where A is the total number of cases when they both agreed, D is the total number of cases when they both disagreed, and *y* is the total number of cases when either the patient or GP agreed with the statement. An item was considered significant if P_{pos} or P_{neg} was at least 0.85 (Ahlen et al., 2007).

In addition, the influence of age, sex, symptom duration, patient educational level and GPs' specialised training on the degree of agreement was tested using regression methods, with the patient-GP agreement employed as the dependent variable. AgreeStat (Gwet, 2010) and Statistical Package for Social Science (SPSS 17) software were used to conduct the statistical analysis using an α level of 0.05 and Confidence Interval of 95%.

2. For the qualitative part (qual)
→ *Qualitative data collection procedure*

To explore the perceived importance of matched expectations for patients and GPs, a qualitative approach was implemented, where 6 patients and 6 GPs participated in the semi-structured telephone interviews. Choosing the most adequate data collection technique in order to gather data that would best address the research aim and questions of the present study was quite challenging for the following considerations. Initially, a focus group approach was felt to be the most appropriate technique for answering the research questions. Focus group research involves organised discussion with a selected group of subjects to discuss, comment and give their views and experiences on a specific topic, and is particularly suited for obtaining several perspectives about the same topic, as it relies on interaction within the group around the topic provided by the researcher (Gibbs, 1997). Focus group discussions require that participants have a specific experience or opinion about the topic, an interview guide is designed, and interaction between participants are encouraged. It relies on using group dynamics to explore perceptions, experiences and understandings (Taylor, 2005). The benefits of focus group discussions over other methods, for example observation, one-to-one interviewing, or questionnaire surveys, include the valuable information obtained through interaction within the group that helps gain insights into people's shared understandings and opinions related to the topic (Gibbs, 1997).

However, in the context of expectations, and particularly in relation to the current research question, the main aim and focus was to explore the personal experience of each subject rather than shared understandings in a group setting. Given

the complexity and diversity of the influencing factors underlying the formation of expectations, the complexity of the back pain problem, in terms of chronicity, long-term pain and disability and possible frustration with management approaches, as well as the complexity of the patient-GP relationship, in terms of communication and concordance, it is expected that each patient would have a unique and characteristic subjective experience and perceptions in relation to the GP and the consultation.

Each subject would have a different set of expectations, a different journey with the symptom, a different subjective experience of the consultation or health care system, and therefore different perceptions about the importance of matched expectations, and this set of different perceptions is what this research question is trying to explore. Despite all the advantages of focus group discussion, in terms of interaction and group dynamics, it would not serve the purpose of providing the best data to answer the research question, because this part of the study is seeking each individual subject's perspective and perceptions rather than a shared understanding. Whilst the main aim of this part of the study was to gather a multiplicity of views and opinions about the subjects' experiences and perceptions, there was a potential risk of losing valuable details if data was to be collected in a group context. Focus group discussion has some disadvantages that might interfere with the purpose of answering the research questions precisely, including inhibition or feeling uncomfortable due to group setting, domination of specific individuals within the group, contamination of an individual's views as a result of others opinion and difficulty in extracting individual views during the analysis (Dawson, 2002).

The initial decision to use a focus group had to be revised and re-considered. Interviewing techniques seemed more appropriate for addressing the research question, as it is mainly used in situations where the main aim is to gain a better understanding of the individual's perception of a particular phenomenon by exploring a set of topics to help uncover their meaning to the individual (Krahn and Putnam, 2005). Interviews are probably the most commonly used data collection method within qualitative research (Taylor, 2005). It encompasses a wide range of methods including structured, semi-structured and in-depth unstructured interview techniques, whether face-to-face or via telephone interviewing methods. Unlike unstructured interviews, which lack a prescribed list of questions to be asked, semi-structured interviews have more structure to them, often as a small set of open-ended questions that allow participants to describe their experiences without the restraints that a more fully structured interview would

create (Krahn and Putnam, 2005). Semi-structured interview was selected as the method of data collection in the present study as it is well suited for the exploration of the perceptions and opinions of participants (Barriball and While, 1994; Carr and Worth, 2001).Unlike structured questionnaires, semi-structured interviews can be advantageous when exploring and trying to seek understanding of a new area (Carr and Worth, 2001), as with the current study, where the main focus is to explore the perceived importance of matched expectations.

While there is a number of interviewing formats (in-person, over the telephone or via the internet), the main aim of the interview is always to explore the 'insider perspective' and to capture, in the participants' own words, their thoughts, perceptions and experiences (Taylor, 2005). For many years, it was assumed that the best way to conduct an interview was in person, until telephone interviewing method was established as a valid approach for data collection few decades ago (Rogers, 1976). A telephone interview can be defined as a strategy for obtaining data about a specific topic of interest, by allowing interpersonal communication without a face-to-face meeting (Carr and Worth, 2001).

Disadvantages of telephone interviews include the lack of visual cues, which is thought to result in loss of contextual and nonverbal data, lack of communication of emotions, and greater difficulty in achieving rapport and interpreting the responses (Carr and Worth, 2001; Novick, 2008). Telephone interviews can, however, allow participants to feel relaxed and able to disclose sensitive information, and evidence is lacking that they produce lower quality data (Novick, 2008). In fact, there is good support in the literature of the usefulness of telephone interviews for collecting research data (Carr and Worth, 2001). Studies comparing face-to-face and telephone interviews reported that the quality of data produced by telephone interviews is comparable to that obtained by face-to-face methods, with participants able to answer complex items on the telephone (Aneshensel et al., 1982; Carr and Worth, 2001; Cook et al., 2003).

Shared advantages between face-to-face and telephone interviews include high response rate and the ability to correct obvious misunderstanding and to use probes (Carr and Worth, 2001). Key strategies for conducting successful interviews include recognising and accounting for interviewer effects (Krahn and Putnam, 2005); telephone interviews are more advantageous than face-to-face methods in terms of smaller interviewing effects and a lower tendency towards providing socially desirable responses (Carr and Worth, 2001). Yet, answers to open questions over the telephone,

particularly in relation to sensitive topics, tend to be shorter and the whole interview procedure tends to proceed faster than in the case of face-to-face interviews (Thomas and Purdon, 1994). However, research has suggested that the relative anonymity and lack of face-to-face contact allow participants to talk honestly and more openly about their thoughts and experiences (Carr and Worth, 2001). Moreover, face-to-face semi-structured interviews might sometimes fail to elicit and capture the richness and depth of data anticipated (Carr and Worth, 2001).

Telephone interviews are mainly used in health care research for large-scale surveys or in smaller qualitative studies, with samples that were purposefully recruited in person or were conveniently selected from respondents to an earlier, larger-scale survey (Carr and Worth, 2001). For this study, and based on the previous brief review of relevant qualitative data collection approaches, it was felt that a semi-structured telephone interview approach would offer distinct advantages over other methods of data collection in answering the research questions, mainly in terms of providing better understanding of each subjects' perception about such a new topic as matched expectations, while allowing them to describe their experiences without restraints in a relaxed atmosphere within their own environment and with a relative degree of anonymity, which would encourage them to talk more openly and perhaps disclose sensitive information if they feel a strong rapport has been established with the researcher. Conducting telephone interviews was expected to reduce interviewing effects and the tendency to provide socially desirable responses.

All patients, who completed the EQs, were asked whether they would like to participate in a telephone interview for further discussion of their perceptions about the importance of matched expectations. If the patient wanted to take part, they would give their contact details on the returned questionnaire. Patients were then contacted to arrange a convenient time for the telephone interview. Similarly, all participating GPs were sent a letter inviting them to take part in a telephone interview.

In order to investigate the perceived importance of matched expectations for patients and GPs, an interview guide was prepared to be used for the recorded semi-structured telephone interviews. The interview guide, which provided an acceptable level of consistency and reliability (Appendix 11), focused on exploring participants' perceptions with regard to the consultation agenda and the main reasons for the encounter, the impact of having matched patient-GP expectations on the back pain consultation, and barriers to this state of matched expectations.

The interview guide was designed in such a way that it was considerably focused and highly structured. It was mainly theory-driven, based on the conceptual framework presented in the current study and the researcher's theoretical and analytic interest in the area of matched expectations (Braun and Clarke, 2006). Although highly structured data collection instruments tend to blind the researcher to other important features or aspects of the phenomena under study, Miles and Huberman (1994) confirmed that interview guides with less structure could produce too much superfluous information leading to data overload, which could compromise the efficiency and power of the analysis. In the current study, themes within the data were identified in a theoretically-driven, deductive, top-down way (Braun and Clarke, 2006), where the themes were strongly linked to the structured interview guide and the conceptual framework rather than being data-driven (i.e., inductive bottom-up way). This approach is deemed appropriate as the study was confirmatory in nature, with relatively focused research questions and well defined sample (Miles and Huberman, 1994).

All telephone interviews were recorded (after taking participants' consent and after confirming that anonymity and confidentiality are kept at all times) using a digital voice recorder, in order to concentrate on conducting the interview rather than writing notes, and to avoid losing or missing any valuable data. Specific probes were used as appropriate during the telephone interview to explain the question, correct any misunderstanding or encourage further elaboration on the item.

⤷ *Qualitative data analysis methods*

The data from the semi-structured telephone interviews was thematically analysed for codes and descriptive labels in order to identify emerging themes. Thematic analysis was used to analyse participants' views in order to understand the significance of their logic and reasoning (Miles and Huberman, 1994), by means of identifying, analysing and reporting patterns (themes) within the collected data (Braun and Clarke, 2006). Thematic analysis procedure has been presented as an adequate method to look for replicable themes that describe types of behaviour (Miles and Huberman, 1994), and as a systematic process that can organise and describe the data set in rich detail (Braun and Clarke, 2006); therefore, it was deemed appropriate for exploring the perceived importance of matched expectations for patients and GPs.

The analysis started by preparing the data; all digitally recorded interviews were transcribed verbatim on the same or following day, and the transcripts were read and re-read several times to familiarise oneself with the data (Miles and Huberman, 1994;

Braun and Clarke, 2006). Recording the interviews helped the transcription of the data and ensured its validity, as the researcher listened to the digitally recorded interviews repeatedly to make sure all the phrases and words were accurately transcribed to reflect the participants' perceptions. Other remarks such as pauses, confirmatory phrases, hesitation or sighs were also documented, as it promoted better understanding of the participants' perceptions and experiences. Listening to the recorded interviews over and over again offered a significant degree of familiarity with the data and allowed the noting down of initial ideas (Braun and Clarke, 2006).

The second step of thematic analysis involved defining the data as codes, by identifying meaning units (Miles and Huberman, 1994; Braun and Clarke, 2006). Codes were generated to identify interesting features of the data and to refer to the most basic attributes of the raw data that can be assessed in a meaningful way regarding the perceived importance of matched expectations (Braun and Clarke, 2006). The meaning units were identified based on direct quotes or paraphrasing of common ideas that fit under a specific code, and therefore, were collated, categorised and placed with the relevant code (Benner, 1985). The data gathered from the semi-structured telephone interviews required careful analysis because of the need to understand the diversity of views and due to the complexity and novelty of the phenomenon being investigated (i.e., matched patient-GP expectations). Analysis involved a constant moving back and forward between the entire data set and the coded extracts of data that is being analysed (Braun and Clarke, 2006), to gain better understanding and insight into the non-textual characteristics of the data.

The next step was to combine related codes by means of defining and studying all specified codes with the aim of identifying convergences and divergences (Miles and Huberman, 1994). Some codes merged and some new ones were constructed. Codes were then sorted and collated into potential themes and the description of each theme was checked for its relevance to the set of codes that have been collated within this theme and to the entire data set (Braun and Clarke, 2006). Potential themes were then refined, where some needed to merge into each other, some needed to be broken down into separate themes, while others were disregarded due to insufficiency of supporting data (Braun and Clarke, 2006). A final set of themes was then established, defined, named and linked to relevant literature (Miles and Huberman, 1994; Braun and Clarke, 2006), in order to establish a valid argument for choosing these themes, through a process of reference to the literature and inference from the collected data (Benner,

1985). To be identified as a theme, the observed pattern had to capture something important about the data in relation to the research question, and represent such patterned response in a meaningful way (Braun and Clarke, 2006). The theme did not necessarily have to be prevalent across the entire data set or the most prominent within each data item to be included (Braun and Clarke, 2006). The main considerations for merging, separating or disregarding any theme were related to a valid argument of its perceived value to participants, its significance in answering the research questions, and its relevance to the existing literature (Appendix 12 shows an example of a thematically analysed interview). Recording also allowed for the themes to be re-checked against the original interviews as a final confirmatory procedure. Finally, a few excerpts were extracted from the interviews to present evidence of each theme (Benner, 1985).

Miles and Huberman (1994) stated that "numbers and words are both needed if we are to understand the world". In this part of the study, qualitative methods were used as a final exploratory tool to explore the perceived importance of patient-GP agreement and to try to put meaning into the figures obtained via quantitative approaches, owing to the nature of the research questions and being a new area of research. Combining the quantitative and qualitative data enabled elaboration and corroboration of each, by means of helping to validate, interpret, clarify and illustrate the findings of each other (Miles and Huberman, 1994), which helped give insight into the perceived importance of matched expectations for patients and GPs.

4.4 Methodological Considerations
4.4.1 Is a questionnaire appropriate?

Using structured questionnaires is one of the main approaches commonly adopted to collect data from a designated sample or population of interest by means of a survey (Baker, 2003). Designing a questionnaire is not an easy task; it requires a series of complex and overlapping processes of designing, piloting, validity testing and revising of the tool. It was important to precisely identify the research question and the purpose of designing the questionnaire in order to justify the anticipated time and effort spent on developing the tool. Over the last few decades, the field of expectations has attracted an increasing attention. Indeed, the impact of expectations on patients' perceived usefulness of the care service and satisfaction, as well as GPs' actions within the consultation is well established in the literature. However, whether these expectations are matched and the effect of this matching on the consultation needs to be investigated using valid, reliable and appropriate measurement tools.

The current study is mainly inquiring about the extent to which back pain patients' and GPs' expectations are matched. Qualitative approaches would be ideal in this situation, especially as we are inquiring about expectations, which are manipulated by a diversity of influencing factors such as personal and psychosocial characteristics, culture, background and many others. It would be sensible to conduct a series of in-depth interviews with patients and GPs, and ask them about their expectations related to the consultation in order to explore the range of these expectations, analyse this rich data and determine if they match or not. It might be more sensible, however, to look at how this data could be used afterwards to change behaviour and inform clinical practice. GPs in today's busy general practice would not have the time to conduct a short interview with each patient to identify their expectations in order to have this ideal status of patient-GP matched expectations; but GPs can simply use an easy-to-use brief tool to capture patients' expectations, the results of which can be used afterwards for training, quality and audit purposes, as well as to inform GPs' own clinical practice. Therefore, it was the intention of the current study to develop a valid questionnaire of patients' and GPs' expectations of the back pain consultation.

An appropriate qualitative approach (for example focus group) was suggested to precede the tool design in order to explore the territory and map key areas, especially if the topic is not fully explored in the literature or there is no clear idea about the range of possible responses that might be given by the particular population subgroup (Boynton and Greenhalgh, 2004). This rule might not be specifically relevant for this study as the topic of expectations has been extensively researched in the literature in different contexts and conditions and with variety of measurement tools that, although not focusing mainly on the matching of back pain patients' and GPs' expectations, provided the researcher with extensive list of expectations items that was used in the data bank for the questionnaire development. The ILR offered a very rich matrix on which the current questionnaire was based, in such a way that a qualitative approach to explore the possible items for inclusion was felt unnecessary. Yet, to add extra rigour to the tool, data from focus group discussions with patient representatives and discussion with GPs and patients within the LIMBIC project was used to add this added quality to the EQ.

4.4.2 Could an existing instrument be used?

The topic of expectations has been extensively researched with various measurement tools being designed and implemented for measuring this aspect (review section 2.1.3). Despite the diversity of these tools, the vast majority of them are generic

and not condition-specific; yet, the range of expectations might vary according to the specific condition. Moreover, no measurement tool exists to explore GPs' expectations and no previous study has attempted to investigate the matching of patient-GP expectations, apparently due to lack of valid measurement tool. A predominant limitation in research conducted so far on this topic is the use of patients' met expectations and satisfaction as a sole measure of the quality of the consultation. Given that the consultation is an interactive dialogue between patients and GPs, it would be inappropriate to judge the quality of this interaction through the patients' perceptions only. An appropriate tool for measuring patient-GP expectations related to back pain consultation could not be identified in the literature; hence, the current study was devoted to designing, piloting and validity testing of the EQ, which was designed to measure back pain-specific patients' and GPs' expectations.

4.4.3 Why closed-ended questions and not an open-ended survey?

Patients tend to disclose more expectations through structured questionnaire than semi-structured open-ended questions (Kravitz, 2001; Peck et al., 2001). Using closed-ended questions for the current measurement tool had the following advantages: ease of completion, standardisation, ease of analysis and less variation in participants' interpretation of the questions (Boynton and Greenhalgh, 2004). All questions were very specific and thus participants were alleged to communicate similar meanings in response to the questions. However, closed-ended questions tend to keep full control of the data collection process with the researcher, and thus deprive the researcher of the valuable aspect of the subjects' thoughts, reflection, opinions and feelings that can be obtained by open-ended questions. Yet, open-ended questions proved to be weak indicators of public opinion with the responses far more difficult and expensive to code and analyse than those from closed-ended questions (Geer, 1991; Boynton and Greenhalgh, 2004). It was suggested that inserting a box for free text comments at the end of the questionnaire (or even after particular items) may add richly to the quantitative data (Crow et al., 2002; Boynton and Greenhalgh, 2004).

In light of the above and reflecting on the current study, the researcher took into consideration the importance of obtaining the participants' own beliefs and opinions that might have not been captured by the closed-ended questions, by including a free text box at the end of the questionnaire for any other reflection, thoughts or feedback from the participants. This was thought to be effective in capturing all aspects of interest when measuring expectations.

4.4.4 Why these specific items in the questionnaire and not others?

One of the major limitations of the closed-ended questions is the assumption that the researcher has included all relevant and significant items related to the topic of inquiry in the measurement tool. In order to fully understand participants' attitudes or opinions about a specific phenomenon, it is essential that the tool enquires about all relevant aspects in a comprehensive way. The impact of the assumption that the researcher has included all relevant items is minimised by ensuring that all items included in the questionnaire were obtained through a structured and integrative review of the relevant literature related to back pain expectations. The content and face validity of the questionnaire were established through rigorous processes of discussion and data collection from a range of participants.

4.4.5 Why self- administered questionnaires (SAQ)?

Careful consideration was taken while designing the questionnaire to ensure it was comprehensible, brief and easy to complete so that it could be self-administered. While designing the tool, the researcher had to make sure that all questions were self-explanatory, presented in a logical manner, relevant to the topic of inquiry, complete and understandable, familiar to the subjects and with an answer format that is clear. In addition, the overall design of the questionnaire was completed in such a way to attract the participants' attention and interest early in the questionnaire by providing a graphical design that emphasised the importance of the topic of interest. SAQ was the method of choice for the following reasons:

- Anonymity and privacy encourage more open and honest responses. SAQ provided considerable amount of identity protection in that no participant can be identified on the basis of a response.

- Less pressure on GPs: Given the acknowledged difficulties for getting GPs to participate in research, the current study was designed in such a way as to minimise the role of the GPs in recruiting patients. To encourage GPs to participate, and instead of asking them to identify patients and recruit them for the study or collect responses from them, the GPs' role was simplified and delimited to just giving eligible patients the information packs with the SAQ.

- Less pressure on participants: Patients would have the chance to read the SAQ, perceive the information and the required task, comprehend what is required of them and then decide whether or not they would like to participate, even at a later time. This would lessen the pressure of the face-to-face situation, where the participant has

to make a considerably fast decision about participation as well as relatively fast responses to the questionnaire items.

- Lack of interviewer bias. The effect of the researcher conducting face-to-face interview and the possible distortion of the data due to his own interpretation is overcome by using SAQ.

- Minimising the effect of transient personal factors: Factors such as back pain severity, anxiety and fatigue that can coincide on the day of data collection and might influence the subject's responses in case of a face-to-face situation are minimised as the subject can complete the SAQ at their convenience.

- Compared to researcher-administered surveys, SAQ is cost effective as it is less expensive and it reduces the work and time required by the researcher for administering the tool.

However, using SAQ presented few practical concerns:

- It assumed that all patients have a good level of literacy.

- It assumed that all patients completed the questionnaire themselves and not other people completing them on their behalf.

- It assumed that all questions were fully understood and interpreted in the way the research intended them to be.

- Some data was missing due to uncertainty about the question, forgetting to respond to all questions, or choosing two answers for a single question.

- Although eligible patients, who were given the expectations SAQ, are considered a random sample, the participants are usually self-selected. The SAQ might have introduced self-selection and participation selection bias, which might affect the generalisability of the findings.

Response bias would still be a concern with both approaches. Subjects' personal characteristics, i.e., personality, honesty, motivation and psychological status might influence their responses to the questions, leading to a trend of extreme responses or social desirability of responses, which would affect the generalisability of the findings. This has been overcome by providing accurate information about the purpose of the study and confidentiality of responses as well as making sure that all questions are in a single-question format, short and self-explanatory, which would allow for lower degree of variability in interpretation of the questions by different participants.

4.4.6 Why a Likert-type scale? Why five-point?

There are several ratings scales that are widely used for measurement and scaling in the field of Social Sciences, i.e., Semantic Differential, Thurstone and Likert rating scale (Peterson, 2000); all of which have been tested and are of known reliability and validity in terms of measuring what they claim to measure (Baker, 2003).

A semantic differential rating scale is a 7-point, bipolar rating scale, in which participants are invited to 'place' a concept or idea on a 7-point horizontal scale anchored by a pair of polar adjectives that label the extreme categories (Peterson, 2000; Baker, 2003). Clearly, the main issue when designing a semantic differential scale would be obtaining relevant pairs of adjectives that can precisely describe the concept or attitude to be measured and that would be meaningful to the intended participants as well (Baker, 2003). A Thurstone scale is another interval scale that consists of a set of statements about a subject which range from very favourable to very unfavourable expressions of attitude toward the subject (Baker, 2003). Although widely used in designing various validated batteries of questions, especially in measuring attitudes, Thurstone scales have a main drawback in that they usually require a considerable degree of effort and time to construct them (Baker, 2003).

Another widely used rating scale is the Likert-type rating scale (Peterson, 2000). Unlike Thurstone scales, Likert scales present to participants a series of statements to indicate their degree of agreement or disagreement by selecting a point on a 3, 5, or 7-point scale ranging from strongly agree to strongly disagree (Baker, 2003). The evidence indicates that both reliability and validity are independent of the number of scale points used for Likert-type items (Jacoby and Matell, 1971; Matell and Jacoby, 1972). Likert himself, in his original paper, did not consider the number of rating categories to be an important issue stating that "If five alternatives are used, it is necessary to assign values from one to five with the three assigned to the undecided position" (Likert, 1932). Data collected by using Likert scales may be presented as either a single, summated score or as a single item profile analysis (Baker, 2003). Moreover, conversion of data from a Likert scale to dichotomous or trichotomous measures does not result in any significant decrement in reliability or validity of the scale (Jacoby and Matell, 1971).

A 5-point Likert-type rating scale was adopted for the questionnaire in the current study for several reasons; they are comparatively easy to construct and easy to

administer, especially in self administered questionnaires, in addition to having good ordinal properties (Baker, 2003). A semantic differential rating scale might require extra preliminary exploratory research in order to establish just what the relevant pairs of adjectives are (Baker, 2003). Obviously, Thurstone scales would require significantly more time and effort to construct and administer than a Likert scale. In addition, individual response analysis would only be possible with a Likert scale but not a Thurstone scale because, unlike Thurstone scales, each statement in a Likert-type scale is a rating scale in its own right (Baker, 2003).

Since there appears to be independence between reliability and validity vectors and the rating format (Jacoby and Matell, 1971; Matell and Jacoby, 1972), and in the absence of a consensus about the ideal number of rating responses to be adopted, it was appropriate to follow the traditional 5-point range in the current Likert-type scale in order to increase participants motivation to complete the scale and reduce administration time.

There is considerable debate over the inclusion of the 'neutral response' in the Likert-type rating scales (Garland, 1991). Some consider it as an easy attractive escape for participants who are disinclined to express a definite view, while others see forcing participants into an agree or disagree direction as a major jeopardy to the collected data, making it less realistic and more misleading, and that it might cause difficulty for many participants (Matell and Jacoby, 1972). The decision as to the inclusion of a neutral intermediate reply in the current study was made based on the stated purpose of the study. The main aim of the questionnaire is to identify events, interventions and aspects that are likely to happen during the consultation as expressed by patients and GPs. An intermediate neutral reply was important to ensure appropriate representation of the range of patients' and GPs' expectations and to guarantee that the collected data is a realistic expression of what patients and GPs consider as important elements of a back pain consultation. A neutral reply gave participants the chance to express a genuine neutral position without being forced to agree or disagree with aspects that they might perceive as occasionally important but not essential for a successful consultation. It is acknowledged that this might have introduced a considerable degree of social desirability bias, where participants chose the neutral response more often in order to appear helpful or to not be seen to give what they perceive as socially unacceptable answers (Garland, 1991).

4.5 Ethical considerations and ethical approval

Five ethical considerations are suggested to be important concerns to address when conducting a research study, i.e., voluntary participation, no harm to participants, anonymity and confidentiality, explaining the purpose and reporting findings (McNamara, 1994). It was not anticipated that the study would elicit significant ethical issues; however, these previous considerations were given careful attention throughout the research project. These are now discussed in further detail in relation to this study.

Voluntary participation was ensured at all times and was explicitly reported on all correspondence, information sheets and questionnaires. All patients were informed that their decision to participate or not would not affect any future care or treatment they might receive. The research design allowed for an optimum level of voluntary participation. Patients meeting the eligibility criteria for the study were given an information pack by their GP that they would take with them to home, read and decide whether they would like to participate or not. If they chose to participate, patients would then send the completed questionnaire in the pre-paid envelope to the researcher directly, with no knowledge or influence from the GP or researcher on the decision to participate. Therefore, patients were confident and sure that their participation was completely voluntary and would not affect the patient-GP relationship or the provision of their health care, because, simply, no one but the patient knew whether he/she decided to participate or not.

For the principle of not harming participants, it was not anticipated that asking patients about back pain or their expectations and attitudes would cause any harm; similarly, it was not anticipated that there would be any ethical issues relating to the GPs participating in the study. Much of the information they gave through the completion of the questionnaires was not sensitive or contentious but related to expectations and attitudes around back pain. Care was taken in the wording and content of the questions and responses within the questionnaire to reduce the potential for any emotional stress or concerns about privacy or sensitivity of data. No sensitive, difficult to answer, embarrassing or upsetting questions were included in the questionnaire. In all cases, measures to meet any patients' or GPs' concerns about any aspect of the study were addressed by one of the following options: 1) arrangements were made for easy contact with the GP or the research team if a patient became stressed about any aspect of the questionnaire or telephone interviews, especially that a very experienced GP was among the study supervisors and acting as the study advisor; 2) access to back pain

information through links to LIMBIC project and direct access to a group of back pain experts within this project; and finally 3) providing the direct telephone helpline of BackCare organisation, which can provide patients with adequate information and reassurance regarding any concerns about their back pain. Otherwise, if the patient was still feeling uncomfortable with participation, he/she was offered to discontinue the study. No such incidents were reported from any of the participating patients or GPs.

Confidentiality and anonymity of the given information and the collected data were ensured and this was emphasised throughout the study by adopting the following measures: All questionnaires were coded to ensure anonymity; participants were reminded that information they provided in the questionnaire would be anonymised and stored safely on password protected computers at the University, with only members of the research team having access to the completed questionnaires and the researcher's notes. The hard copies of the questionnaires were stored in a locked filing cabinet at the University. Using self-administered questionnaires provided identity protection in that no participant could have been identified on the basis of a response.

For the last two considerations suggested by McNamara (1994) with regard to explaining the purpose of the study and reporting findings, detailed information about the purpose, aims, proposed methods and importance of the study were provided in the information sheets given to the participants. A brief report outlining a summary of the main findings will be sent to participants informing them of the outcome of the study (if they have asked for this report to be sent to them). Some of the study findings have been published in relevant peer-reviewed scientific journals for dissemination and contribution to knowledge (Appendices 15 - 19), while others are still being prepared for submission.

The study was granted ethical approval from the local NHS Research Ethics Committee (Appendix 9). Several issues were discussed in the initial ethical review meeting including the complexity of some questions in the patients' questionnaire and information sheet, few inclusion criteria and the ambitious sample size. All discussed issues were given careful consideration and the study was reviewed in light of the suggestions; revision of the patients' questionnaire and information sheet was done to avoid any complexity or ambiguity and the upper age limit for participants (65 years) was omitted from the inclusion criteria. The study was eventually granted a favourable opinion in February 2009. Governance approval was gained for the study from the local NHS Research and Development Committee (R&D).

Chapter V
<mark>Main Study Results</mark>
A Mixed Methods Approach

This chapter presents the findings of the main study. After developing, piloting and validity testing of the newly designed EQ, version 5 of the questionnaire was ready for use in the main study, which comprised of a sequential mixed methods design. The main aim of the quantitative part of this mixed methods study was to investigate the matching of patients' and GPs' expectations of the back pain consultation, by means of comparing case-matched groups using the newly designed EQ. Subsequently, the qualitative part explored the perceived importance of a state of matched expectations for patients and GPs, using semi-structured telephone interviews.

5.1 Recruitment and participation

A total of 419 GPs, from one Primary Care Trust in the South of England, were invited to take part in the study. After sending several reminders asking GPs to decide whether or not they wish to participate, a total of 216 GPs responded while 203 did not respond at all to the invitation letter. Of those 216 GPs, 173 decided not to participate, 17 agreed to participate while 26 GPs reported that they have moved or retired, and therefore will not be able to participate (Figure 11).
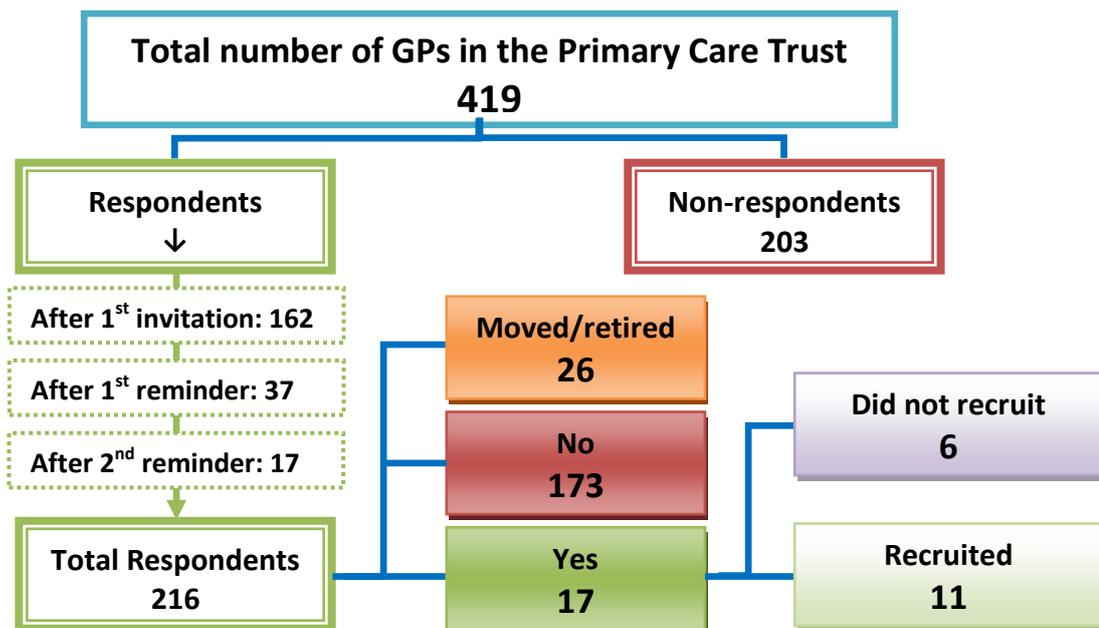
Figure 11 Recruitment and participation

Table 10 Total number of recruited patients for each of the participating GPs

GP	Dr.1	Dr.2	Dr.3	Dr.4	Dr.5	Dr.6	Dr.7	Dr.8	Dr.9
Target	10	10	10	10	10	10	10	10	10
Recruited	0	1	5	6	2	2	8	5	8

GP	Dr.10	Dr.11	Dr.12	Dr.13	Dr.14	Dr.15	Dr.16	Dr.17	Total
Target	10	10	10	10	10	10	10	10	**170**
Recruited	8	0	0	10	0	2	0	0	**57**

Patients' packages including the EQ, information sheet and pre-paid envelope were provided to each of the 17 GPs to give to eligible patients; of them, only 11 GPs (65%) were actively involved in the research study (i.e., recruited at least one patient), and successfully recruited 57 patients for the study, with the remaining 6 GPs (35%) unable to successfully recruit for the study (Table 10 and Figure 12).

Doctor No.	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]
Mar-Apr	0	0	2	3	1	2	4	2	6	2	0	0	2	0	1	0	0
Jan-Feb	0	0	3	1	1	0	2	2	1	1	0	0	1	0	1	0	0
Nov-Dec	0	1	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0
Sept-Oct	0	0	0	2	0	0	1	0	0	4	0	0	7	0	0	0	0
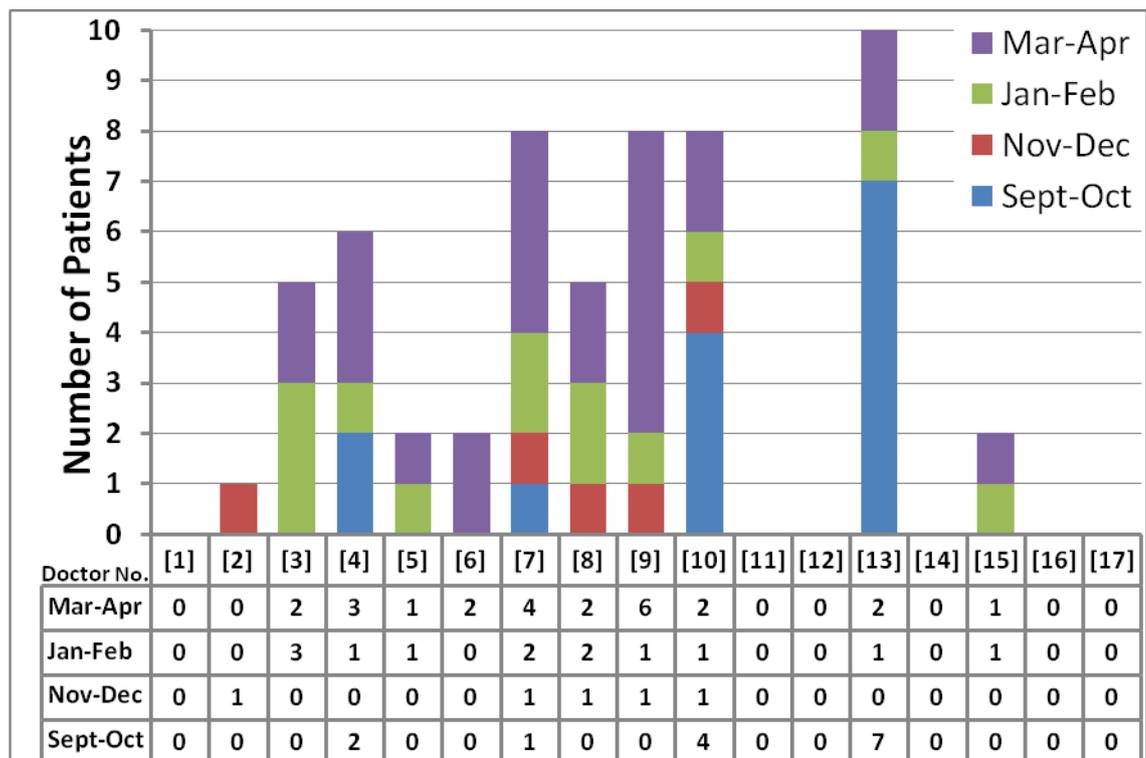
Figure 12 Total number of recruited patient for each of the participating GPs

Several recruitment updates (Appendix 10) were sent to participating GPs throughout the recruitment period via emails and post to enhance recruitment and participation rate. The total number of recruited patients for every month of the

recruitment period is shown in Figure 13. Target (1) represents the required number of participants if all 17 GPs were actively recruiting for the study, i.e., 170 patients, based on 17 GPs, each recruiting up to 10 patients. Target (2) was calculated at the end of the recruitment period to reflect the actual target for the current study, i.e., 110 patients, based on 11 GPs, each recruiting up to 10 patients.

As can be inferred from Figure 12, only 4 GPs have actively engaged and successfully recruited for the study in the first 2 months (Sept-Oct), while 5 recruited in the following 2 months (Nov-Dec). Nine GPs recruited patients in the months of January and February; two of them were recruiting their first patient with no recruitment activity in the previous 4 months. Those 9 GPs continued to recruit in the following 2 months (Mar-Apr), with one new GP starting to recruit late in the last month of the recruitment period. Two GPs have been recruiting throughout the whole recruitment period; four have been recruiting over 75% of the proposed recruitment period; while the other 5 recruited over less than half of the allowed period for recruitment.

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Target (1)	34	68	85	102	119	136	153	170
Target (2)	22	44	55	66	77	88	99	110
Actual	6	13	18	18	24	31	46	57
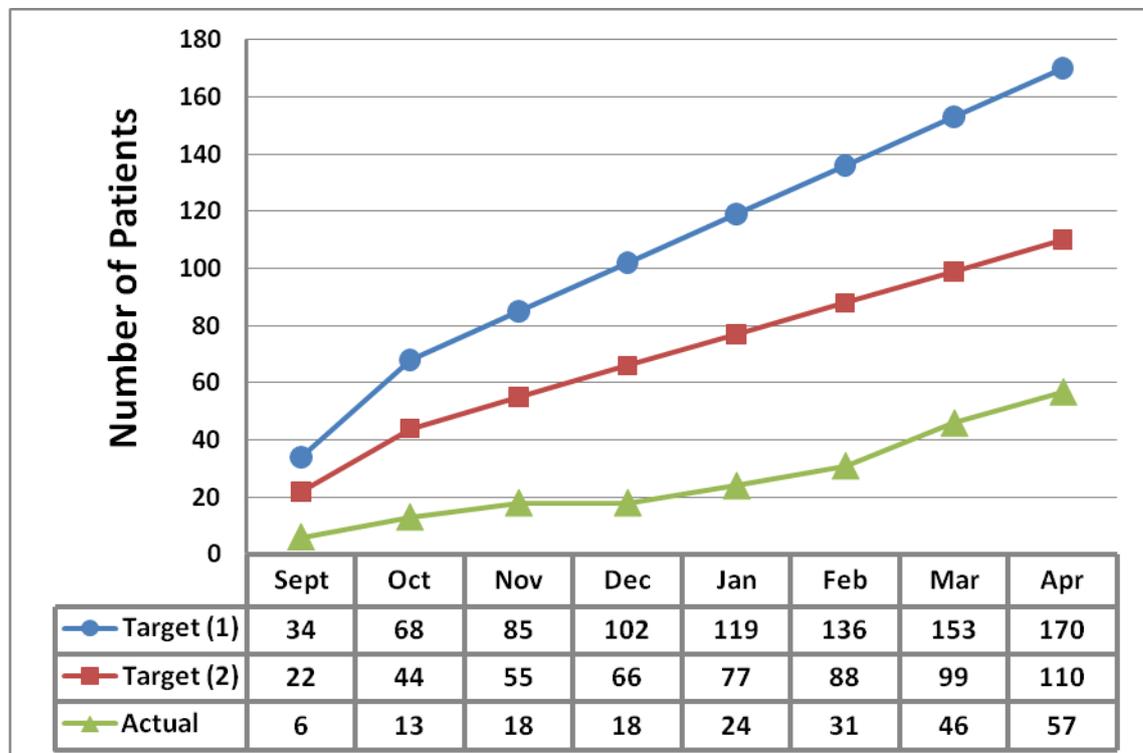
Figure 13 Number of recruited patients for each month of the recruitment period

Target (1): target number of patients if all 17 GPs recruited - Target (2): target number of patients when only 11 GPs recruited - Actual: actual number of recruited patients

Generally speaking, March and April were the months with the highest recruitment rate with a total percentage of recruited patients of 27% and 18% respectively. Conversely, there has been no recruitment activity over the month of December. The other months have had average percentage of recruited patients of 11% (Figure 14).
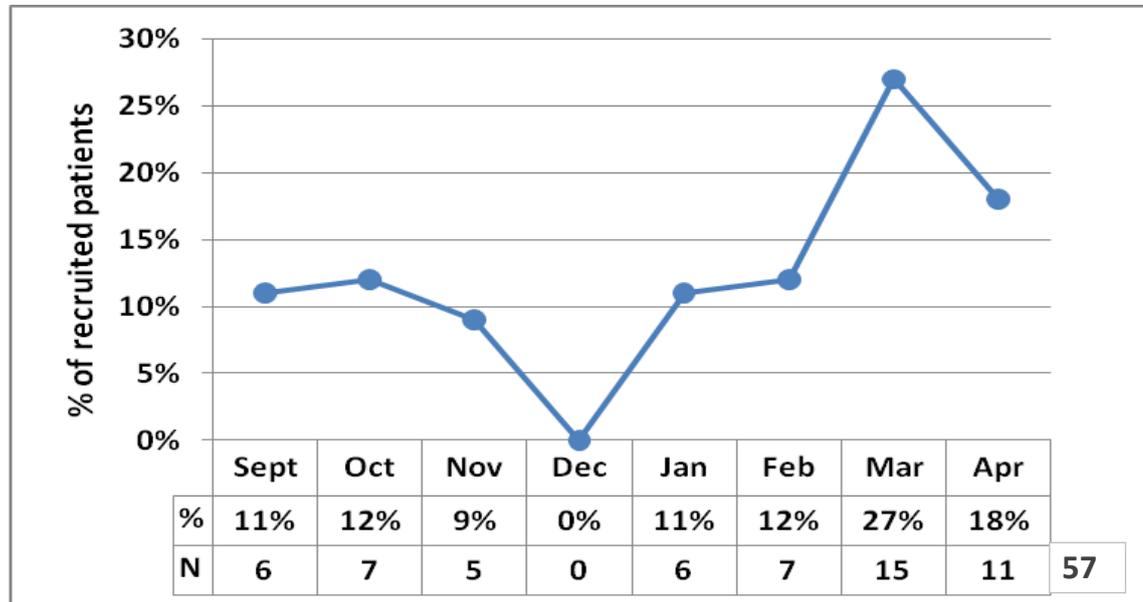
Figure 14 Percentage of recruited patients for each month of the recruitment period

5.2 Demographic data
5.2.1 Participants' demographic data

Eleven GPs *(m=8, f=3)* and 57 patients *(m=24, f=33)* participated in the current study with average age of 50.6 and 46.6 years respectively. Patients reported an average duration of back pain of 55 months; highest level of education was 40% and 60% for basic education and higher education respectively. On average, GPs were involved in direct patient care for 38 hours per week and had been in General Practice for 20 years. A summary of the demographic data of all participants is shown in Table 11.

Table 11 Participants' demographic data

	Patients	**GPs**
number	57	11
Age (mean + SD)	46.6 (±15.7)	50.6 (±5.3)
Sex [male]-[female]	[24]-[33]	[8]-[3]
Duration of back pain (months)	55 (±88)	--
Years in General Practice	--	20.4 (±8)
Hours/week in patient care	--	38.8 (±11.7)

5.2.2 Characteristics of the practices

GPs from 11 different general practices in one Health Authority in the South of England have been involved in the current study; of which, nine are located in urban settings, while two are situated in rural region. Table 12 shows the number of GPs, and patients in each practice.

Table 12 Characteristics of participating practices

Code	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11
Region	U	U	R	R	U	U	U	U	U	U	U
***n* GPs**	9	2	5	3	4	9	6	2	6	6	3
***n* patients**	9000	4000	10000	3600	n/a	13000	10500	10500	10000	6000	6500
Teaching	yes	no	no	no	no	yes	no	no	no	no	yes

U= Urban, R=Rural

5.3 Descriptive analysis of patients' and GPs' responses

Analysis of the returned questionnaires showed that the majority of patients (>90%) agreed that GPs' listening [Q5], being warm and friendly [Q4], and providing adequate explanation [Q13] and information [Q14] as common patients' expectations of back pain consultation. More than 80% believed their GP would be able to help with their pain [Q21] and expected the consultation to be of appropriate duration [Q20]. More than two thirds of the patients reported that they would expect their corresponding GP to discuss their fears and doubts [Q6], explore the impact of pain on their social life [Q7], take full history of the problem [Q8], conduct physical examination [Q9], make a referral [Q10], provide education [Q15] and information about prognosis [Q16], and involve patient in decision making [Q19].

Only about 60% of the patients expected their GP to ask them about their expectations in the consultation [Q1]; patients were less likely to express their expectations to their GP [Q2] and only half of them expected the GP to ask about unmet expectations at the end of the consultation [Q3]. Table 13 and Figure 15 show that the least reported expectations were for prescriptions [Q12] and GP discussing patients' beliefs [Q17] and management ideas [Q18].

Table 13 Patient-GP agreement as measured by the Expectations Questionnaire

EQ	Patients (*n*= 57)				GPs (*n*= 11)			
	% of agreement		Mean	Range	% of agreement		Mean	Range
	Agree	Dis-agree			Agree	Dis-agree		
Q1. GP to ask about expectations	61	39	3.7	2-5	93	7	4.4	2-5
Q2. Patient to express expectations	53	47	3.4	1-5	60	40	3.6	2-5
Q3. Unmet expectations recognised	51	49	3.5	1-5	68	32	3.9	1-5
Q4. GP warm and friendly	95	5	4.5	3-5	100	0	4.8	4-5
Q5. GP listening	91	9	4.6	3-5	100	0	4.9	4-5
Q6. Doubts and fears discussed	75	25	4.1	2-5	100	0	4.7	4-5
Q7. Impact on social life explored	68	32	3.8	1-5	90	10	4.5	3-5
Q8. Full relevant history taken	84	16	4.1	2-5	88	12	4.5	2-5
Q9. Physical examination done	77	23	4.0	2-5	88	12	4.0	2-5
Q10. Referral	70	30	4.0	2-5	9	91	2.2	1-4
Q11. Tests/investigations	61	39	3.8	2-5	17	83	2.5	1-4
Q12. Prescriptions	47	53	3.6	1-5	68	32	3.7	1-5
Q13. Adequate explanation given	95	5	4.5	1-5	100	0	4.3	4-5
Q14. Information	95	5	4.3	1-5	100	0	4.3	4-5
Q15. Education	84	16	4.2	1-5	100	0	4.6	4-5
Q16. Information about prognosis	86	14	4.2	1-5	77	23	3.8	3-5
Q17. Patient beliefs discussed	60	40	3.7	2-5	77	23	4.0	3-5
Q18. Patient management ideas discussed	47	53	3.5	2-5	77	23	4.1	3-5
Q19. Patient involved in decision making	84	16	4.1	2-5	100	0	4.3	4-5
Q20. Adequate consultation time	82	18	4.1	1-5	63	37	3.5	2-5
Q21. GP can help with the pain	86	14	4.2	1-5	96	4	4.7	3-5

As shown in Table 13 and Figure 15, all GPs reported being warm and friendly [Q4], showing interest and listening [Q5], discussing patients' fears and doubts [Q6], providing adequate explanation [Q13], information [Q14] and education [Q15], as well as involving patients in decision making [Q19] as common GPs' expectations and are essential content of a typical back pain consultation. The majority of GPs (≈90%) agreed they would explore the impact of back pain on their patients' social life [Q7], take full history of the back problem [Q8] and conduct physical examination [Q9] during the consultation. Almost all GPs reported they would ask the patients about their expectations during the consultation [Q1], but only two thirds were likely to ask about unmet expectations at the end of the encounter [Q3]. More than 75% of the GPs expected to provide information about prognosis [Q16] and discuss patients' beliefs [Q17] and management ideas [Q18], while about two thirds expected to prescribe medication during the consultation [Q12]. As many as 96% of the GPs believed they would be able to help their patients with their pain [Q21], but only about two thirds expected the consultation to be of appropriate duration [Q20]. The least reported expectations were for referral [Q10] and investigations [Q11], where as little as 9% and 17% (respectively) of the GPs reported them as common expectations during the back pain consultation.
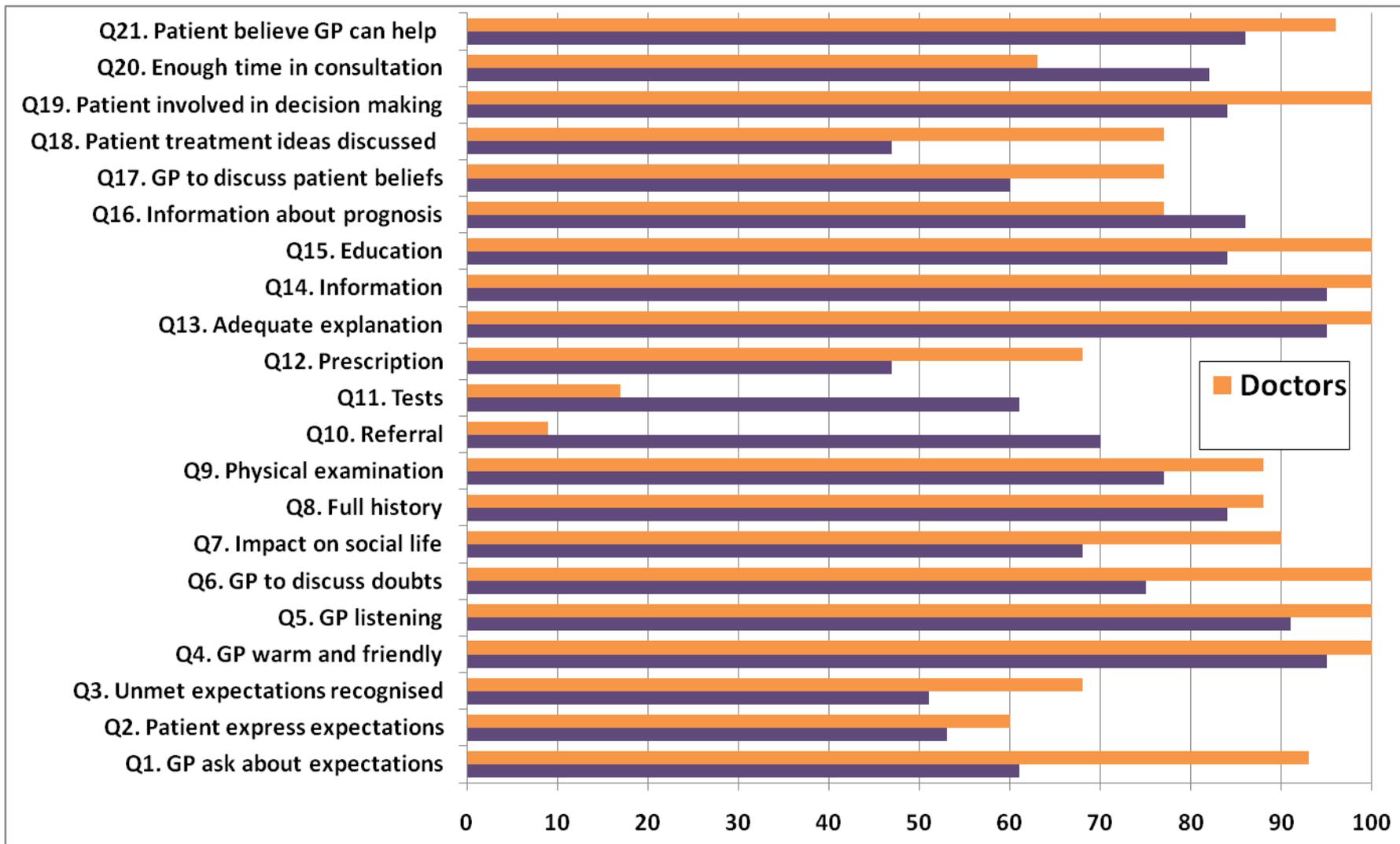
Figure 15 Patient-GP agreement as measured by the Expectations Questionnaire

Table 14 presents a summary of the average responses of each participating GP and corresponding patients for each of the EQ items. Figures highlighted in purple represent the items when the GP agreed while the corresponding patients disagreed with the item. Figures highlighted in yellow represent the opposite case.

Table 14 Average responses of each GP (D) and corresponding patients (P) for each expectation item

Expectations Questionnaire Items																					
Code	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**
D1	4	2	4	5	4	4	4	5	5	3	3	5	4	4	4	4	4	4	4	4	4
P1	4	2	4	4	4	4	4	4	4	4	4	5	4	4	5	4	4	3	3	5	4
D2	4	5	5	5	5	5	5	5	4	2	4	4	4	4	5	3	4	5	5	4	5
P2	4	3	3	5	5	3	4	4	4	4	4	3	4	4	4	4	4	3	4	5	4
D3	5	5	3	5	5	4	3	5	4	2	2	2	5	5	5	4	4	4	4	5	5
P3	3	3	4	5	5	4	4	4	5	4	4	4	5	4	5	5	4	4	4	4	5
D4	3	5	3	5	5	5	5	5	5	2	2	4	4	4	5	5	4	5	5	5	5
P4	4	3	3	4	4	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	5
D5	5	2	4	5	5	5	5	4	4	2	2	3	4	4	4	4	4	4	4	4	3
P5	3	4	3	5	5	5	4	4	4	4	4	5	5	5	4	4	4	4	4	4	5
D6	5	4	4	4	5	4	5	4	4	2	2	4	4	4	4	4	4	4	4	4	4
P6	4	4	3	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	4
D7	4	4	4	4	4	4	4	3	2	4	4	4	4	4	4	4	3	3	4	3	4
P7	4	3	4	4	5	4	3	5	4	4	4	4	5	5	4	4	4	3	4	5	4
D8	4	4	3	5	5	5	5	5	5	2	2	5	4	4	5	3	3	3	4	2	5
P8	4	4	4	5	4	4	4	4	4	4	4	4	5	4	4	4	4	3	5	4	4
D9	4	2	4	5	5	5	4	5	4	2	3	3	4	4	4	4	4	4	4	2	5
P9	4	3	4	4	5	4	4	4	4	3	3	3	4	4	4	4	4	4	4	3	3
D10	5	3	5	5	5	5	5	5	4	2	2	4	5	5	5	4	5	4	5	4	5
P10	4	4	4	5	5	4	4	4	4	4	4	4	5	5	4	4	4	4	4	4	5
D11	2	3	1	5	5	5	4	2	3	1	1	1	4	5	5	4	5	5	5	5	5
P11	3	4	4	4	4	3	3	2	3	3	3	3	5	5	5	5	3	3	4	3	3

There was almost full agreement between all patients and their corresponding GPs for items related to GPs' personal characteristics, i.e., being friendly and warm [Q4], and listening [Q5], as well as GPs' clinical attitude, i.e., items related to history taking [Q8], physical examination [Q9], explanation [13], information [Q14] and education [Q15] (highlighted with green border in Table 14), except for one GP (D7) who disagreed with their patients on the likelihood of having full relevant history taken [Q8], and physical examination conducted [Q9] during a typical back pain consultation, owing to time constraints as reported by the GP (D7) in the free text space provided on the GPs' part of the EQ. Conversely, analysing the data showed a distinctive pattern of consistent patient-GP disagreement for several items. About two thirds of the patient-GP pairs disagreed about the referral [Q10] and test ordering [Q11] items, where patients expected to receive them while GPs were less likely to offer them. Interestingly, the other three pairs (D7-P7, D9-P9 & D11-P11) who had matched expectations of those 2 items (referral and test ordering) differed significantly; while the last two pairs (D9-P9 & D11-P11) agreed on the unlikelihood of having tests ordered [Q11] or referral made [Q10] during the consultation, the first pair (D7-P7) actually agreed that they would expect such actions during the encounter.

Given that, and combining another important item, i.e., the ability of the GP to help [Q21], it was evident that despite jointly agreeing that they would not expect referral or test ordering during the consultation, patients (P9 and P11) were less likely to expect their GP to be able to help with the pain. Conversely, the first pair (D7-P7), who agreed they would expect referral or test ordering during the consultation, reported that they expect the GP to be able to help. This might suggest that responding to patients' expectations - even if not appropriate - would maintain the clinical relationship with patients and that denying them would compromise patient trust and would affect the ability of the GP to help; however, this is not the case. Further analysis of the data from Table 14 reveals a different perspective. Whilst two thirds of the pairs had unmatched expectations with regard to referral [Q10] and test ordering [Q11] items, it did not actually affect the general expectation that GPs would be able to help patients with their pain [Q21], as all of the 8 pairs (who had unmatched referral and test ordering items) agreed that they expected the GP to be able to help. Another interesting combination of responses was observed for items related to patients expressing their expectations [Q2] and GP asking about unmet expectations [Q3], which reflects the challenges associated with communicating and managing expectations in general practice.

5.4 The matching of patient-GP expectations

All questionnaires were coded for pair-wise statistical analysis of the data in order to investigate the matching of patient-GP expectations for each of the questionnaire items. Table 15 presents the agreement matrix for patients and GPs expectations for each of the 21 EQ items.

Table 15 Agreement matrix for patients and GPs expectations

Q1 Expectations explored		P		
		A	D	Σ
GP	A	34	19	53
	D	1	3	4
	Σ	35	22	57

Q2 Expectations expressed		P		
		A	D	Σ
GP	A	16	18	34
	D	14	9	23
	Σ	30	27	57

Q3 Unmet ones recognised		P		
		A	D	Σ
GP	A	19	20	39
	D	10	8	18
	Σ	29	28	57

Q4 GP warm and friendly		P		
		A	D	Σ
GP	A	54	3	57
	D	0	0	0
	Σ	54	3	57

Q5 GP listening		P		
		A	D	Σ
GP	A	52	5	57
	D	0	0	0
	Σ	52	5	57

Q6 Doubts-fears discussed		P		
		A	D	Σ
GP	A	43	14	57
	D	0	0	0
	Σ	43	14	57

Q7 Impact on social life		P		
		A	D	Σ
GP	A	34	17	51
	D	5	1	6
	Σ	39	18	57

Q8 History		P		
		A	D	Σ
GP	A	43	7	50
	D	5	2	7
	Σ	48	9	57

Q9 Examination		P		
		A	D	Σ
GP	A	39	11	50
	D	5	2	7
	Σ	44	13	57

Q10 Referral		P		
		A	D	Σ
GP	A	3	2	5
	D	37	15	52
	Σ	40	17	57

Q11 Tests		P		
		A	D	Σ
GP	A	6	4	10
	D	29	18	47
	Σ	35	22	57

Q12 Prescription		P		
		A	D	Σ
GP	A	21	18	39
	D	8	10	18
	Σ	29	28	57

Q13 Explanation		P		
		A	D	Σ
GP	A	57	0	57
	D	0	0	0
	Σ	57	0	57

Q14 Information		P		
		A	D	Σ
GP	A	54	3	57
	D	0	0	0
	Σ	54	3	57

Q15 Education		P		
		A	D	Σ
GP	A	48	9	57
	D	0	0	0
	Σ	48	9	57

Q16 Information on prognosis		P		
		A	D	Σ
GP	A	38	6	44
	D	11	2	13
	Σ	49	8	57

Q17 Patient beliefs discussed		P		
		A	D	Σ
GP	A	26	18	44
	D	8	5	13
	Σ	34	23	57

Q18 Patient ideas discussed		P		
		A	D	Σ
GP	A	23	21	44
	D	4	9	13
	Σ	27	30	57

Q19 Patient part of decision		P		
		A	D	Σ
GP	A	48	9	57
	D	0	0	0
	Σ	48	9	57

Q20 Time		P		
		A	D	Σ
GP	A	32	4	36
	D	15	6	21
	Σ	47	10	57

Q21 GP can help		P		
		A	D	Σ
GP	A	47	8	55
	D	2	0	2
	Σ	49	8	57

A- agree, D- disagree, P- patient, Σ- sum

In order to investigate the matching of patients' and GPs' expectations, the five-point scale was dichotomised as 'agree' or 'disagree' and subsequently Kappa coefficient of agreement (K), Gwet's agreement coefficient (AC_1), proportion of overall agreement (P_o), and indexes of proportional agreement (P_{pos} and P_{neg}) were then calculated for each item.

As shown in Table 16, the highest agreement between patients and GPs was for provision of adequate explanation of the problem [Q13], where the collected data showed a remarkable 100% agreement between patients' and GPs' expectations [$AC_1=$ 0.999, $P_o=$ 100%, $P_{pos=}$ 1, $P_{neg=}$ 0]. There was significantly high patient-GP agreement for items related to GP being warm and friendly [Q4: $AC_1=$ 0.944, $P_o=$ 94.7%, $P_{pos=}$ 0.97, $P_{neg=}$ 0], showing interest and listening [Q5: $AC_1=$ 0.904, $P_o=$ 91.2%, $P_{pos=}$ 0.95, $P_{neg=}$ 0], providing information [Q14: $AC_1=$ 0.945, $P_o=$ 94.7%, $P_{pos=}$ 0.97, $P_{neg=}$ 0], education [Q15: $AC_1=$ 0.815, $P_o=$ 84.2%, $P_{pos=}$ 0.91, $P_{neg=}$ 0] and engaging patients in decision making [Q19: $AC_1=$ 0.815, $P_o=$ 84.2%, $P_{pos=}$ 0.91, $P_{neg=}$ 0].

Surprisingly enough, despite all reports in the literature suggesting that patients and GPs are not particularly satisfied with current back pain management in primary care and that GPs find it a difficult and unrewarding condition to deal with, however, analysing the data showed that the vast majority of participants expected their GP to be able to help with their pain [Q21], where P_{pos} was 90% [$P_o=$ 82.5%, $AC_1=$ 0.791].

On the contrary, the traditional triad that has always been linked to back pain consultation has been a major source of patient-GP unmatched expectations; low patient-GP agreement can be observed for items related to referral [Q10: $AC_1=$ -0.31, $P_o=$ 31.6%, $P_{pos=}$ 0.13, $P_{neg=}$ 0.43], test ordering [Q11: $AC_1=$ -0.1, $P_o=$ 42.1%, $P_{pos=}$ 0.27, $P_{neg=}$ 0.52], and prescriptions [Q12: $AC_1=$ 0.12, $P_o=$ 54.4%, $P_{pos=}$ 0.62, $P_{neg=}$ 0.43]. In addition, over half of the patients and GPs had unmatched expectations in relation to aspects related to the likelihood of the GP discussing with the patients their own beliefs about the problem [Q17: $AC_1=$ 0.197, $P_o=$ 54.4%, $P_{pos=}$ 0.67, $P_{neg=}$ 0.28] and their ideas about management [Q18: $AC_1=$ 0.173, $P_o=$ 56.1%, $P_{pos=}$ 0.65, $P_{neg=}$ 0.42].

Only a quarter of the participants agreed that patients are likely to explicitly express their expectations to their GP during the encounter [Q2: $AC_1=$ -0.1, $P_o=$ 43.9%, $P_{pos=}$ 0.5, $P_{neg=}$ 0.36]. Likewise, just one third of the participating patients and GPs agreed that they would expect the GP to ask about any unmet expectations at the end of the consultation [Q3: $AC_1=$ -0.01, $P_o=$ 47.4%, $P_{pos=}$ 0.56, $P_{neg=}$ 0.34].

Table 16 Statistical analysis of patient-GP agreement for each expectations item

| Item | % agreement | P_o | Proportional index [a] | | K | Agreement | | |
			P_{pos}	P_{neg}		AC_1	SE	CI
1. GP to ask about expectations	60	64.9%	0.77	0.23	0.127	0.458	0.125	0.209 - 0.708
2. Patient to express expectations	28	43.9%	0.50	0.36	- 0.134	-0.106	0.136	0 - 0.167
3. Unmet expectations recognised	33	47.4%	0.56	0.34	- 0.059	-0.015	0.141	0 - 0.268
4. GP warm and friendly	95	94.7%	0.97	0	0.006	0.944	0.033	0.878 - 1
5. GP listening	91	91.2%	0.95	0	0	0.904	0.045	0.815 - 0.993
6. Doubts and fears discussed	75	75.4%	0.86	0	0	0.687	0.090	0.507 - 0.867
7. Impact on social life explored	60	61.4%	0.76	0.08	- 0.089	0.422	0.128	0.165 - 0.679
8. Full relevant history taken	75	78.9%	0.88	0.25	0.13	0.722	0.085	0.552 - 0.893
9. Physical examination done	68	71.9%	0.83	0.2	0.048	0.605	0.105	0.396 - 0.815
10. Referral	5	31.6%	0.13	0.43	- 0.027	-0.310	0.143	0 – 0.472
11. Tests/investigations	10	42.1%	0.27	0.52	- 0.009	-0.109	0.144	0 - 0.179
12. Prescriptions	37	54.4%	0.62	0.43	0.082	0.120	0.138	0 - 0.397
13. Adequate explanation given	100	100 %	1	0	0.5	0.999	0.001	0.998 - 1
14. Information	95	94.7%	0.97	0	0	0.945	0.033	0.879 - 1
15. Education	84	84.2%	0.91	0	0	0.815	0.065	0.684 - 0.946
16. Information about prognosis	67	70.2%	0.82	0.19	0.02	0.574	0.109	0.355 - 0.792
17. Patient beliefs discussed	46	54.4%	0.67	0.28	- 0.019	0.197	0.144	0 - 0.486
18. Patient management ideas discussed	40	56.1%	0.65	0.42	0.147	0.173	0.139	0 - 0.452
19. Patient is part of decision making	84	84.2%	0.91	0	0	0.815	0.065	0.684 - 0.946
20. Adequate consultation time	56	66.7%	0.77	0.39	0.196	0.448	0.126	0.197 - 0.7
21. GP can help with the pain	82	82.5%	0.90	0	- 0.059	0.791	0.070	0.65 - 0.932

% agreement= percentage of agreement, P_o= proportion of overall agreement, K= Kappa agreement coefficient, AC_1= Gwet's agreement coefficient, SE= standard error, CI= confidence interval, [a] Indexes of proportional agreement

| *Low agreement P_o< 60% | *Moderate agreement P_o= 60-80% | *High agreement P_o> 80% |

Interestingly, analysing the collected data showed that the 21 expectation items have been evenly distributed among the 3 classes (high, moderate and low agreement); the seven items with moderate patient-GP agreement included GP asking about patients' expectations [Q1: $AC_1=$ 0.458, $P_{o=}$ 64.9%], discussing their fears and doubts [Q6: $AC_1=$ 0.687, $P_{o=}$ 75.4%], exploring the impact of pain on social life [Q7: $AC_1=$ 0.422, $P_{o=}$ 61.4%], taking full relevant history of the problem [Q8: $AC_1=$ 0.722, $P_{o=}$ 78.9%], conducting physical examination [Q9: $AC_1=$ 0.605, $P_{o=}$ 71.9%], and providing information about prognosis [Q16: $AC_1=$ 0.574, $P_{o=}$ 70.2%], as well as expectations related to adequate consultation duration [Q20: $AC_1=$ 0.448, $P_{o=}$ 66.7%]. Further exploration and analysis of those seven items showed that, in spite of the moderate patient-GP agreement, those seven items had relatively high P_{pos} (specific proportion of all positive responses), which reflects that such items are highly valued aspects by patients and GPs and are important elements of the consultation.

5.5 Relationship between agreement and other variables

To investigate the impact of other variables on patient-GP agreement, linear regression method was used to identify the effect of several characteristics on the Gwet's Agreement Coefficient (AC_1). These variables were related to patients (age, sex, level of education and duration of symptoms), GPs (age, sex, number of hours per week in direct patient care, number of years in general practice, specialised training) and practice characteristics (geographical region and the number of GPs and registered patients in the practice). Patients' level of education was dichotomised with two possible responses, i.e., basic education and higher education. Similarly, GPs' specialised training was dichotomised into yes or no. Practices were classified according to whether it was in a rural or urban geographical region.

Regression analysis (Table 17) revealed that, among all studied variables, only two had statistically significant effect on agreement; these were GPs' specialised training and number of GPs in the practice. Further analysis was done to explore the interaction between all variables and its effect on agreement using backward elimination stepwise regression. This technique involves identifying all variables where the significance level was equal or less than 0.2 ($P \leq 0.2$), entering all those variables in one regression model, then eliminating the variables with the highest significance level, one at a time, while testing the significance levels of each of the remaining variables. Accordingly, all variables with P value ≤ 0.2, i.e., GPs' sex, hours per week in general practice, special training and number of GPs in the practice, were all entered into one

regression model; regression analysis showed no significant impact of the interaction between these variables on agreement. The variable with the highest significance level (i.e., sex followed by hours/week in patient care) was then eliminated and regression was re-calculated. No such interaction between these four variables seemed to significantly influence patient-GP agreement. Training and number of GPs in the practice were highly correlated but did not seem to interact significantly to affect agreement. According to this regression analysis, it is concluded that GPs' special or advanced training in back pain management would increase the Agreement Coefficient (AC_1) by approximately 14%, while it might be expected that agreement would improve by about 3% with each one unit increase in the number of GPs in a given practice.

Table 17 Regression analysis of the effect of patient, GP and practice characteristics on patient-GP agreement

	Variable	ß	95% CI	Sig.
Patient	age	0.001	(-0.003, 0.005)	0.488
	sex	0.061	(-0.060, 0.183)	0.316
	education	-0.028	(-0.156, 0.100)	0.661
	duration	0.000	(0.000, 0.001)	0.590
GP	age	-0.004	(-0.017, 0.008)	0.485
	sex	-0.119	(-0.264, 0.026)	0.106
	hrs/week	0.004	(-0.001, 0.009)	0.094
	years/GP	-0.001	(-0.008, 0.005)	0.668
	training	0.136	(0.020, 0.251)	0.022
Practice	region	-0.011	(-0.186, 0.163)	0.896
	n. GPs	0.028	(0.003, 0.053)	0.030
	n. patients	0.000	(0.000, 0.000)	0.634

ß= Beta Regression Coefficient - 95% CI= Confidence interval at 95% - Sig.= Significance
hrs/week= hours per week in direct patient care - years/GP= years in general practice

5.6 Test-retest

In order to investigate the reliability of the EQ, a test-retest approach was implemented, where a subsample of seven GPs were asked to complete the questionnaire for a second time after 2 weeks. The Intra-class Correlation Coefficient (ICC) for the test-retest showed significant scale reliability, where the ICC was calculated at 0.772 (95% CI= 0.684 – 0.835). Wilcoxon Signed Ranks Test showed no significant difference between the overall scores for the two tests (*P*= 0.990). Further reliability testing was done by analysing the data from the test-retest for each specific

questionnaire item; no specific item seemed to have poor reliability as there was no significant difference between the test-retest scores for all of the 21 questionnaire items as shown in Table 18.

Table 18 Reliability testing (test-retest) for each of the 21 questionnaire items

Item	Sig.	Item	Sig.	Item	Sig.
1	0.102	8	1.000	15	0.655
2	0.516	9	0.564	16	0.129
3	0.783	10	1.000	17	0.414
4	0.564	11	0.705	18	0.564
5	0.317	12	0.655	19	0.655
6	1.000	13	0.564	20	0.157
7	0.317	14	0.564	21	0.083

Sig.= significance level (2-tailed) using Wilcoxon Signed Ranks Test

5.7 Findings of the telephone interviews
5.7.1 Participants' demographic data

Twelve participants, 6 patients and 6 GPs, were conveniently identified from the main group as they were willing to participate in further discussion about the topic and were invited to take part in the semi-structured telephone interviews that aimed at exploring the perceived importance of matched expectations. Demographic data of the 12 participants is shown in Table 19.

Table 19 Demographic data of the participants in the telephone interviews

GPs	Age	Sex	Years in GP	Hrs/week in GP	Patients	Age	Sex	Duration of BP
D1	58	M	30	30	P1	67	F	52*
D2	56	M	30	63	P2	69	F	9
D3	47	M	8	40	P3	64	F	25*
D4	58	M	30	40	P4	29	M	5
D5	53	F	25	20	P5	31	F	7
D6	49	F	10	24	P6	70	M	20*

*GPs- general practitioners, Hrs/week in GP- hours per week in patient care/general practice, BP- back pain, *=back pain on and off over specified period*

The telephone interviews lasted for an average of 7.9 minutes (range= 4.3 - 10.2) for GPs and 6.9 minutes (range= 6.3 - 10) for patients. The telephone interviews followed a semi-structured approach, where an interview guide with probes was used during the discussions (Appendix 11), which have mainly concentrated on addressing three principal topics: (1) the consultation agenda, (2) the perceived importance of having matched patient-GP expectations, and (3) the possible barriers to this matching. Interviews were transcribed and analysed for codes and core themes. The following fundamental themes emerged in response to the interview questions.

5.7.2 Qualitative findings from the GPs' interviews

Six GPs participated in the semi-structured telephone interviews that were geared towards exploring their perceptions regarding the importance of having matched expectations with their patients during the back pain consultation. The main focus of the interview guide was related to three central topics, namely, the consultation agenda, the impact of matched expectations on the consultation, and barriers to a state of matched expectations. Thematic data analysis identified a total of eight emerging themes with respect to these three interview guide topics. One emerging theme was identified from the data related to the first topic. Four emerging themes, i.e., empathy, communication, adherence and satisfaction, were the main subjects that described GPs perceptions regarding the second topic, and three themes were identified from the last topic.

5.7.2.1 GPs' consultation agenda

→ *Biomedical versus psychosocial approach*

The traditional debate regarding the best management approach for back pain in general practice continued to emerge as a burning issue and a core theme in the current interviews. Most GPs reported adopting a bio-psychosocial model for the back pain consultation in general practice but with a wide degree of variation, in terms of the dominance, power and priority of each of the two components. Some placed more emphasis on the biological and medical aspects of the problem, with an obvious biomedical orientation and domination, while still responding to patients' psychosocial needs to some extent.

> *"The assessment first of all, so obviously to assess severity and whether there is any immediate treatment. The red flags are priority first of all to exclude serious things......, and then working out the management plans that are acceptable to the patients and that fit in with their lives... [D2]."*

Interestingly, experienced GPs with specialised training and clinical interest in back pain seemed to value and place more weight on the biomedical model. In response to the question regarding the main objectives of the consultation, a GP, with 25 years of experience and specialised training in back pain care, stated:

> *"I would take history about their backache and how long they had it and how severe it is, and what causation has caused it. Then, I would examine them, and after examination, depending on the findings, I would offer manipulation, acupuncture or referral to physiotherapy [D5]."*

Other GPs seemed to prioritise and value the psychosocial aspect more than the biomedical side of the management, owing to the acknowledged difficulties associated with back pain management in general practice and the clinical complexity of the condition, in terms of the symptom presentation, severity, chronicity and impact on social life, job situation and psychological well-being.

> *"During back pain consultations, it is important to explore patients' concerns and worries, and their perceptions regarding the effect of the backache on routine life and activities. Once this is clear, the consultation can then be targeted towards these concerns and worries [D6]."*

> *"I suppose what I want to hear is whether it is something new or have they ever had it before....., and then try to work out what is the impact the pain had on the patients' lives and what are they doing about it at the moment and what are they hoping to get from me [D4]."*

Other GPs seemed to have a clearer idea regarding how to integrate the two components, the biomedical and psychosocial, in a more practical way, i.e., a bio-psychosocial approach.

> *"Obviously, I would like to listen to the patient, listen to the history, examine the patient, and hopefully give advice, education or treatment that would relief their pain [D1]."*

> *"It is mainly according to the individual patients' needs..., it might include things like history taking, examination, life style and education, and it is mainly a bio-psychosocial rather than pure medical consultation [D3]."*

Nevertheless, all GPs agreed that there is no single approach that can be applied to all back pain consultations in primary care, which would fit all patients and all situations.

> *"Some patients are concerned about how this will restrict their abilities to perform in sports and activities; others are worried about how long it will take them to recover; some are worried it might be something serious; and finally, some people will have work related issues ...., it is difficult to have a generic scenario for the back pain consultation, because patients differ widely in their health beliefs and attitudes [D6]."*

"Generally, I don't usually have a specific agenda and it is mainly according to the individual patient's needs, so different consultation scenarios for different patients [D3]."

It was evident that many GPs still see the bio-psychosocial management of back pain as problematic and hard to achieve. Many would almost always rely on a biomedical approach when undertaking a back pain consultation with a patient, and despite the acknowledged importance of considering the psychosocial aspects of the patients' lives, they are still unable to fully integrate these aspects in their day-to-day management of back pain in general practice. GPs continued to acknowledge the appropriateness of the bio-psychosocial approach for managing back pain in general practice, but barriers to full implementation of this model still exist.

5.7.2.2 Perceived importance of matched expectations

All GPs perceived a state of matched patient-GP expectations as highly significant for a more successful back pain consultation, with each of them viewing and defining this importance in different terms and meanings, owing mainly to each GP's unique characteristics, clinical knowledge and previous experience.

"To be able to explore and meet patients' expectations is an art which involves a lot of experience. For me, having matched expectations with my patients and involving them in the plan of management help empower them over their health problems and give them the chance to open up and explain their needs [D6]."

"It is a huge kind of thing, because we know now the importance of 'matched expectations' is not just about back pain but for anything [D2]."

Four emerging themes were identified with regard to GPs' perceptions of the importance of matched patient-GP expectations during the consultation, namely, the relationship between patient-GP agreement and empathy, communication, adherence and satisfaction.

↪ *Agreement and empathy*

GPs perceived a state of matched patient-GP expectations as a strong mediator of empathy that would enhance the consultation experience, for patients and GPs, and could create a better medium for interaction.

"Certainly, if the doctor is on the same wavelength of anticipation as the patient and would empathise them, the patient feels as if the doctor has been listening, and hopefully the consultation would be much more valuable....., this would help both the doctor and the patient [D4]."

Agreement and communication (shared decision-making)

Although the vast majority of the research studies of patients' expectations in primary care consultations focused only on the patients' perspective and the meeting of their expectations, recent studies that looked beyond this analysis have focused on concordance and patient-GP agreement, and its impact on different aspects of the clinical care, e.g., communication (Zebiene et al., 2008). Communication has always been a central topic in primary care research, with a wide variety of new perspectives including shared decision making, patient involvement and patient-centred approach.

With regard to the present study, GPs linked matched patient-GP expectations to a better communication during the consultation and appeared considerably confident that having such an agreement with their patients could potentially improve the process of the encounter, in terms of listening, interacting, planning, negotiating and taking decisions regarding the plan of care.

"I suppose communication would be greatly affected by having matched expectations; if they [patient and doctor] agree then communication would be calm, but if they are disagreeing during the consultation, then they would be using different styles. So it does make a big difference [D3]."

"I think it would be helpful if both the doctor and the patient are thinking along the same line and are both hoping to achieve the same thing [D4]."

"..., if the doctor makes every effort to recognise and understand what the patient is hoping and expecting during the consultation, and try to match these expectations ...., good communication is likely to be expected [D1]."

Agreement and adherence

The issue of patients' compliance and adherence to the advice or treatment given is an ever present and complex problem, especially for patients with a chronic illness (Vermeire et al., 2001). The collected data suggests that the patient-GP relationship plays an essential role in patients' adherence, and that the matching of their expectations could mean concordance, mutual agreement with regard to the advice or treatment given

during the consultation, and potentially patients' full adherence to such prescribed interventions. Efficient patient-GP collaboration is proven to have a direct benefit on health care outcomes through improved compliance (Zebiene et al., 2008). The main emerging theme with regard to the impact of matched expectations on patients' adherence was that negotiation of patients' expectations during the consultation, in such a way to enhance patient-GP agreement, could result in them having the same viewpoint at the end of the consultation, which could potentially improve adherence.

> *"I think if the GP explains why he is not offering it (X-ray), then I suppose the patient might not be happy about it, but would probably accept it. Patients would be more compliant if you can convince them and tell them why you think they should drop this specific idea from their agenda [D3]."*

> *"It (matched expectations) is particularly becoming an issue as with regard to prescribing now..., I think the old fashioned idea, which we were brought up on, saying that we dished out the medicine to the patient and it was their fault if they didn't take it, has got out of the window now and you got to quite understand why they do not want to take medicine and try to find a solution that they are happy with [D2]."*

✦ *Agreement and satisfaction (unmet expectations)*

GPs concurred that it is unlikely that patients' and GPs' expectations would consistently agree with regard to all aspects of the consultation all the time. There was an implicit agreement and acceptance among GPs that, for such a state of matched patient-GP expectations to be achieved, they will both have to compromise their expectations and needs in order to reach a mid-point.

> *"For the doctor and the patient to have matched expectations, they will have to compromise between their expectations, as they are unlikely to agree about all points. If a state of unmatched expectations is identified, I suppose both - the doctor and the patient - have to change to achieve such agreement and this would be judged according to how reasonable and feasible each one's expectations are [D3]."*

> *"We try to talk about their needs; what they think their needs are and what I think their needs are............, and then try to marry up, so that by the end of the consultation, we both have the same viewpoint [D4]."*

Most of the GPs agreed that exploring patients' expectations and trying to match patient-GP expectations often led to the recognition and negotiation of patients' unmet expectations, which was often followed by attempts to explain and justify why such expectations were not met.

> *"I tend to ask the patients about their expectations during the consultation, and if I identified some unmet expectations, I would try and respond to them again and see why they need them [D3]."*

> *"I suppose I try to make them understand the implications of that; ...a very common one is time off work, ...they have got to be fully aware of the long term consequences of just having a week off work, ...it can affect their employability for the future [D2]."*

GPs suggested that such approach would render the patients quite satisfied with the consultation and with the provided service, even though they have not received what they originally wanted. They stated that a state of matched patient-GP expectations would help reduce the prevalence of unmet expectations among back pain patients and would enhance satisfaction with the consultation. This is consistent with previous evidence suggesting that addressing patients' expectations could potentially influence satisfaction as much, or more than, the outcome of treatment itself (Zenz and Strumpf, 2007).

> *"Patients will be happy that you have identified that they need something; .... even without being able to respond to them instantly would still make the patient quite happy and satisfied with the consultation [D3]."*

> *"I try to explain why I don't think what they expect is the right thing to do in their specific situation. I think offering alternatives to patients in case of unmatched expectations would not usually affect their satisfaction [D5]."*

Moreover, they suggested that this would help educate patients for better formulated future expectations; *"If you explain why and give a reasonable explanation rather than just saying no we don't do X-rays. ..., then they won't be expecting it [D4]."*

According to the collected data, patient-GP agreement seemed crucial to a successful back pain consultation for it forms the principal and initiating component of a reactive cycle, where unmatched patient-GP expectations could potentially lead to unmet expectations, which could in turn provoke lower satisfaction (Williams et al.,

1995). The cycle continues as lower satisfaction is suggested to induce poor adherence to the advice given as well as less symptom improvement (Bell et al., 2002). Based on the data from the GPs' telephone interviews, it can be assumed that promoting a state of matched expectations and patient-GP agreement could potentially encourage a more successful back pain consultation, in terms of enhanced communication, empathy, adherence and satisfaction

> *"If the patient's agenda is not revealed in order to have this matching of our expectations, and if the doctor is directing the consultation in such a way that the patient's expectations are not explored, most probably this consultation will go wrong and the outcome will be compromised; this will obviously affect compliance and adherence to treatment, and consequently satisfaction, and possibly symptom improvement [D6]."*

> *"I think the main promoter for a satisfied patient and for a state of patient-doctor agreement is listening to patients [D5]."*

> *"... In addition, usually patients will listen and comply with the advice that they see as being based on a shared decision-making; I mean when doctors have been listening to the patients and have understood their concerns and expectations [D1]."*

5.7.2.3 Barriers to a state of matched expectations

In spite of the high agreement among GPs regarding the importance of matched expectations, this is not as easy, promising and straightforward as it appears. GPs consistently agreed that achieving this matching of patient-GP expectations in the context of back pain care is not a simple task.

> *"To be perfectly honest, it is quite a difficult and challenging equation. Maybe in the ideal world we can marry patients' & doctors' expectations, but it might not be quite possible in today's busy general practice [D1]."*

> *"This (matched expectations) is more difficult than it used to be [D2]."*

GPs reported several reasons for the difficulties and challenges that interfere with having a state of matched expectations with their patients in general practice. This data was analysed and the following three core themes were identified.

➔ *Patient's versus GP's consultation agenda*

Lack of a clear set of expectations (patients' or GPs') that could guide the interaction and communication during the consultation, and consequently, enhance the consultation outcome seems to be one possible reason for such a difficulty in achieving optimal agreement between patients' and GPs' expectations.

> *"Some doctors might not actually have specific objectives during the consultation and would just listen to their patients and respond to their needs. But also you have all the sort of patients who would come to the consultation without any prior expectations and they just want to de-load their worries and concerns about their back pain to their doctors. In both cases, it would be very difficult for the doctor to recognise and meet the patient's expectations in a way to encourage their matching [D1]."*

Different patients' and GPs' consultation agendas seemed to contribute to the difficulties with achieving a state of matched patient-GP expectations. In such a situation, each of them - the patient and the GP- would not know what to expect during the consultation, would not understand and recognise the other party's perspective and would act for their own maximum benefit rather than for a mutual understanding and benefit of both of them.

> *"We try to talk about their needs; what they think their needs are and what I think their needs are and then we try to establish a state where we both are looking towards achieving the same goals. It is more tricky when the patient comes in with one idea and it may be very long way from what I think what they should be doing [D4]."*

> *"I think the main barrier could be different agendas [D6]."*

> *"To be honest, doctors are mainly concerned with management of their clinical caseload, while, in the meantime, trying to give patients enough time, listen to them and try to make them happy. The bottom line of my expectations is to be able to finish my daily workload, while still having happy patients. On the other hand, patients want to be listened to, because it is their own life and they have to quite understand what is wrong. I think this is a main reason for mismatched expectations [D1]."*

The nature of patients' expectations seemed to play an active role in the degree to which GPs perceived a state of matched expectations as difficult and challenging.

> *"One of the main barriers would be patients' unrealistic or unjustified expectations, for example, a sick leave; ....also, previous experience with the healthcare system might affect their current expectations [D4]."*

> *"Patients' inaccurate information [D5]" and "unnecessary worries [D6]" could hinder the matching of expectations and adversely affect adherence to the advice given by the doctor.*

Nevertheless, GPs also reported that their own clinical attitude might have adverse effects on the ability to elicit and recognise patients' expectations, which could affect the matching of their expectations with those of the patients. For example, *"undervaluing or not recognising patients' expectations [D2]", "inefficient patient-doctor communication [D3]" or "the inability to actively listen to the patient and to ask open questions [D6]"*.

➜ *Culture and language variations*

The culture, background and language were reported as regular obstacles for having matched expectations. GPs stated that they find it quite challenging to understand different patients' cultures and beliefs, which would affect their ability to optimise patients' expectations in order to have such a state of patient-GP agreement.

> *"Culture and language; so certainly not understanding what a patient's background is and what their expectations are, which I think is difficult for us with cultures we are not familiar with [D2]."*

However, it is argued that the challenges posed by cultural and lingual variations is a common issue for most professionals within the entire health care system, and that general practitioners are actually in better position to overcome such obstacles.

> *"We are fortunate as GPs that we have the chance to know people better than any other hospital doctor. It helps when you know the person you are dealing with and what their health beliefs are [D6]."*

➜ *Time and caseload*

As would be expected, time constraints and the heavy clinical caseload were reported by all six GPs as main reasons for not being able to encourage and achieve this state of matched expectations with their patients during back pain consultations.

"Work pressure, time, case overload ... I think 20 minute consultation would render everybody happy and alright! [D3].

"If I have 20 minutes for each patient, then yes, I would be able to match our expectations more often. But with the current circumstances, to be honest, I don't think I would be able to offer the same range of services for each of my back pain patients [D1]."

5.7.3 Qualitative findings from the patients' interviews

Six patients participated in the semi-structured telephone interviews with the aim of exploring their perceptions regarding the importance of matched patient-GP expectations. The interview guide was adapted for patients, with questions matching the same three central topics of the GPs' interviews, i.e., the consultation agenda, the importance of matched expectations and barriers to this matching. Thematic data analysis identified the following emerging themes with respect to these three topics.

5.7.3.1 Patients' consultation agenda

A similar theme was identified from the patients' interviews corresponding to that identified from the GPs' responses to the question regarding the consultation agenda and the main objectives or reasons of the back pain consultation.

➜ *Biomedical versus psychosocial approach*

With regard to the most appropriate approach for back pain management in primary care, there was an obvious consensus among patients about what they perceived as comprehensive back pain care. Unlike GPs, who had variable views and preferences regarding the biomedical and psychosocial models, all patients but one emphasised the importance of a psychosocial approach to back pain management, where the GP is expected to show interest, listen, enquire about the impact of pain on the social life and psychological well-being, and consider the pain within the overall context of the patient's life. Patients appreciated a bio-psychosocial approach but with more value and preference put on the psychosocial component.

"I would very much appreciate if my doctor could spend enough time with me listening carefully to my complaint, the impact of the pain on my life and the changes since the last treatment I had for my back pain [P4]."

"My main expectation ... that the doctor listens to me, number one, to listen to me, good communication..., and I'd expect him to talk to me about all aspects of my life affected by pain [P1]."

5.7.3.2 Perceived importance of matched expectations

Like GPs, patients agreed that a state of matched patient-GP expectations seemed to be a main ingredient for a successful back pain consultation. They reported that agreement is particularly more important in the context of back pain due to the significant and multifaceted impact of the pain on different aspects of their lives. Agreeing with their GPs resembled reaching a safe shore, where they are confident that the GP has understood their complaint, considered their perspective and would use the tools of expertise and knowledge to help them with their pain.

"I think every patient would like to have a good agreement between their expectations and the doctor' expectations and have the same sort of goals during the consultation; but, I think, for back pain patients, this is more valued and more needed ....., and will affect the way they see the value of the consultation and probably the ability of the doctor to help [P2]."

"I think this [matched expectations] is really important and would make me feel the consultation was worthwhile and valuable [P5]."

Five emerging themes were identified with regard to patients' perceptions of the importance of matched patient-GP expectations during the consultation, namely, the meaning of matched expectations and the relationship between such an agreement and communication, adherence, satisfaction and trust.

� *The meaning of matched patient-GP expectations*

Patients perceived the meaning of this matching in different ways. For some of them, matched expectations meant good two-way communication, shared decision-making and jointly agreed overall plan.

"To have matched expectations with my doctor means that we have discussed the problem properly, the doctor has been listening to my

complaint and has explained and provided information about the problem and we have discussed and agreed the treatment [P5]."

"I'd first listen to what the doctor has to say and I'd expect him to listen to what I have got to say, then hopefully work something out of that [P3]."

For others, matched expectations was the responsibility of the GP, who would listen to the patients, recognise, understand and negotiate their expectations, and guide the consultation in a way to promote the matching of the patients' expectations with those of the GP's.

"....., I think the most important issue when dealing with a patient, in any place and for any condition, is for the doctor to be able to understand the patient, their feelings and expectations and try to move with the consultation in the direction of a mid-point of agreement between what the patient wants or expects and what the doctor thinks is appropriate [P4]."

➜ *Agreement and communication*

Communication is a crucial component of the consultation and patient care. Encouraging patients to express their expectations during the consultation, in order to negotiate, or meet and match them with the GPs' expectations, is thought to improve the perceived efficacy of the communication during the visit as well as the overall experience with the consultation (e.g., *"Matched expectations... means we discussed the problem..., the doctor has been listening..., explained and provided information..., and we discussed and agreed the treatment..., I feel the consultation was worthwhile and valuable [P5]"*). According to the collected data, patients stated that patient-GP agreement will not only affect the communication within the context of the single visit, but it is very likely that it could potentially improve communication in future consultations as well (e.g., *"I was quite happy to openly discuss all my worries and concerns with my doctor in the following consultation. I felt he (GP) was very interested and was listening to me and I was quite happy to follow his advice [P2]"*).

The relationship between matched expectations and communication seemed complex and multifaceted. Some patients found no difficulty to communicate their concerns about any unmet expectations to their GPs in case of disagreement (e.g., *"If I want something in particular and my doctor did not recognise such expectation, I'd ask him if such expectation is appropriate [P1]"*). They reported that good communication and agreement are closely related (e.g., *"It is a two way thing; you have got to listen...,*

and the doctor has got to listen ....., and then agree something together [P3]" and *"....part of the agreement is to share our opinions about the best treatment and to have the same sort of plan after the consultation [P4]").*

Patients reported that part of the effective communication is to facilitate patient-GP agreement regarding different aspects of the consultation, which in turn would improve their perceptions with regard to the value of the consultation and the efficacy of the interaction.

> *"My doctor has always been great in listening to me throughout the consultation...., of course, he would not always agree, but he would listen to the end, discuss with me, and then would take actions that I always see as appropriate..., just talking to me about it...., makes me feel I have been respected and listened to..., unmet needs are usually dealt with before leaving the consultation room [P2]."*

✦ *Agreement and adherence*

Patients agreed that matched patient-GP agreement could improve adherence and compliance (e.g., *"Yes. I will be more likely to follow my doctor's advice if we agreed about different aspects of the consultation [P1]"*). Patients reported that matched expectations imply that the GP has been listening to them and has considered their expectations and acted to reach a mid-point of agreement, and that the advice or treatment given has been jointly agreed between them, which made them more punctual in following the GPs' recommendations (e.g., *"It's very important for me to have my opinion and my doctors' opinion considered during the appointment; then I know my complaint was understood and I know I will be following the advice [P4]"*). Nevertheless, patients reported that they would still be adherent to the recommendations even in the case of unmatched expectations, because they have confidence in their GPs (e.g., *"I trust my doctor..., If we had unmatched expectations..., I would still follow his recommendations [P5]"*).

✦ *Agreement and satisfaction*

Despite trusting their GPs and having significant amount of confidence in their knowledge and clinical expertise, patients reported that they would value if GPs explained why they thought the patients' unmet expectations were not appropriate. Such an explanation was enough for the patients to feel respected and listened to. Patients exclusively agreed that disagreement between patient-GP expectations could affect their

satisfaction with the consultation, and that the degree of dissatisfaction would depend on the value placed on such expectations that were not met or that led to the mismatch or disagreement.

"I'd value if the doctor agrees with my expectations and thinks they are appropriate. I think I'd feel more satisfied. I don't know if my satisfaction would be affected if we disagreed; I think it depends how important were these for me [P4]."

"Yes, I think my satisfaction will be affected, depending on how severe the disagreement was during the consultation. I think the doctor should address my expectations to a degree [P3]."

".... If we disagreed and I followed his advice and later if the problem was not solved, then I guess I would not be satisfied, and I would be less confident in his ability to help me, and I would think that what I wanted in the beginning was better for me [P5]."

Despite evidence to suggest that patients are generally dissatisfied with the current back pain management in primary care and with the care given to them by their GPs, the general perception that prevailed throughout the telephone interviews with patients suggested the opposite.

"I went to see our doctor, who is renowned to be very good at back pain... and a good GP gives you much more confidence..., he did not send me to have an X-ray, because he did not think we need it....., he was right and now I have no problem with my back at all. [P6].

"My doctor has always been great in listening to me throughout the consultation ...., actually, every word he told me was right and I feel much better now [P2]."

"I'd expect him, and I know he does, to talk to me about all aspects of my life affected by pain [P1]."

➔ *Continuity of care, trust and mismatched expectations*

While GPs suggested that negotiation of patients' expectations during the consultation and explanation of the reasons behind unmet ones could reduce the prevalence of unmet expectations, and subsequently would prevent feelings of

dissatisfaction; surprisingly, patients had another perspective. Patients reported that, in case of unmatched patient-GP expectations, they would listen to their GPs, without that affecting their satisfaction, because they simply have confidence in their GPs, providing that the GP is familiar and trustworthy; traits established through continuity of care and trust-based relationship with the same GP over time. They suggested that, in case of unmatched patient-GP expectations, trust and familiarity with the GP affected the degree to which they would be satisfied with the given care and adherent to the advice.

> *"....., even if the doctor didn't respond to my expectations, this would not affect my satisfaction, because I trust the expertise of my doctor and I know he would take the best decision, which is in my best interest. Because I trust him, I would listen to him whatever he advises [P1]."*

> *"If he [GP] strongly disagrees with my expectations, then I'd accept it, because I trust my doctor; but it obviously have to be a doctor that I know and thought I could trust.... As long as I have got a follow-up appointment, then I can go back and discuss what disagrees with me [P3]."*

> *"..., I trust my doctor and I think he would always do his best to help me, so I guess, I would listen to his advice; and if we had unmatched expectations, then I would want to know why mine are not appropriate, but also I would follow his recommendations [P5]."*

5.7.3.3 Barriers to a state of matched expectations

Several barriers to the effective matching of patient-GP expectations were reported by patients. These ranged from the very common ones, for example, time and caseload, which was reported by all six patients, to the less expected ones, such as lack of continuity of care and trust-based relationship, which were highly valued by patients, especially in the context of back pain, where there is a multifaceted impact of the pain on the patients' lives and a possibility of recurrence. (e.g., *"Not seeing the same doctor would definitely affect agreement [P2]"* and *"I suppose if you are not too keen on the doctor..., it has got to be someone that you like..., you need to be so familiar with the doctor [P3]"*). Lack of effective communication was also reported as a main barrier to matched expectations, for example, using jargons, lack of provision of relevant information, GPs' limited knowledge about back pain, and patients' aggression and challenging behaviour about their lives and health.

Chapter VI
Discussion
A Mixed Methods Approach

<< It is the whole environment that is created in the doctor-patient relationship, in that it is not really permissive on either side; neither side is encouraging the other to talk about it. >>

By James Allen

The primary aim of this study was to contribute to an understanding of the role of matched patients' and GPs' expectations with regard to different aspects of the back pain consultation in primary care. The study started by asking the question: To what extent are back pain patients' and their GPs' expectations matched? To answer this question, and due to a lack of appropriate and validated tools in previous literature, it was necessary to develop a valid measurement tool that can measure such an aspect. The Expectations Questionnaire was developed, piloted and tested, and was used in the current study. The main study focused on investigating the matching of patients' and GPs' expectations of the back pain consultation using the newly designed questionnaire, followed by exploring the perceived importance of this matching for patients and doctors using semi-structured telephone interviews.

The aim of this chapter is to collate, discuss and draw together the main findings in relation to the research questions posed for the present study. The discussion is presented in six sections. The first section presents a brief introduction to the chapter (6.1). Section 6.2 summarises the results of the questionnaire survey and discusses the main areas of agreement and disagreement between patients' and GPs' expectations, and relates it to previous literature. This is followed by section 6.3 that reports on the findings of the telephone interviews, and discusses the perceived importance of matched expectations for patients and doctors, and barriers to this matching. Section 6.4 reflects on the study findings in relation to the Met-Matched conceptual model and suggests a few implications regarding its applications. Section 6.5 discusses the main limitations of the quantitative and qualitative parts of the study, and finally, section 6.6 presents the implications of the study findings for current practice, research and education.

6.1 Introduction

The questions that guided this research study have been addressed by the three enquiries conducted. The integrative literature review and pilot study responded to the first research question, and resulted in the development of a validated measurement tool of the matching of patients' and GPs' expectations. The questionnaire survey addressed the second research question by investigating the matching of patient-GP expectations, and identifying potential aspects of convergences and divergences of such expectations. The perceived importance of matched expectations, the subject of the third research question, was lastly explored by means of patients' and GPs' telephone interviews.

The results of the present study showed that patients and GPs agreed on two thirds of the EQ items, while they disagreed regarding the other one third, which comprised of seven items, namely, expectations expression, unmet expectations recognition, referral, tests, prescriptions, GPs' discussing the patients' beliefs about the problem, and their ideas about the management. Thematic analysis of the qualitative data from the telephone interviews identified several core themes with regard to the perceived importance of matched expectations, including the impact of patient-GP agreement on empathy, trust, communication, adherence and satisfaction, which gave insight into the potential significant role of matched patient-GP expectations for a successful back pain consultation in primary care. This chapter discusses and draws together the main findings of the present study. Section 6.2 discusses the results of the quantitative part (questionnaires), while section 6.3 reports on the findings of the qualitative part (telephone interviews).

It is customary in the discussion section of a research thesis to try to connect the current findings with past literature, whilst highlighting the main weaknesses and limitations of previous studies, and discussing how the current study was allegedly successful in addressing these gaps and overcoming such reported limitations. In other words, the discussion chapter presents how the current study was different from other studies focusing on similar topics or subjects, and what was the new contribution to knowledge in contrast to past literature; in the present study, however, the discussion chapter used past literature in a different way and for a different aim. Given the novelty of the topic of 'Met versus Matched expectations', and the scarcity of previous research investigating the matching of patient-GP expectations or establishing the importance and impact of such a matching on different aspects of the consultation, the main aim of the discussion chapter was to use previous literature to triangulate, corroborate and

validate the claims posed by the current study findings. The mixed methods approach adopted in the current study provided a significant degree of confirmation and verification of the findings, where the qualitative data was used to support and explain the quantitative data; yet, the overall implications and findings of the current study needed a strong literature backup and conformity in order to justify, support and confirm the current study findings, particularly that a strong direct evidence regarding the significance and impact of matched expectations on the consultation is lacking. In this discussion chapter, the previous literature was used to enhance the credibility and validity of the study findings, by means of inference and inductive reasoning, as well as drawing direct and indirect relationships between various variables to establish potential links, association and interplay between several mediators and attributes that could have an impact on the back pain consultation. However, this should not be mistakenly taken to mean that the analysis and discussion of the findings were restricted and delimited to the literature in support of the current study findings; the discussion tried to be comprehensive and inclusive in reporting the literature that supported and confirmed the study findings, as well as previous studies that were not in favour or contradicted the current findings.

6.2 Discussion of the results of the quantitative part: The matching of patient-GP expectations

6.2.1 Introduction

Although most back pain patients adopt self-management strategies, back pain is a leading reason for GP consultation (Maniadakis and Gray, 2000). According to Main et al. (2010), the medical consultation is often the starting point of most clinical interventions, with patients' and GPs' beliefs and expectations at the heart of this process, for they serve as potential influences on adherence, precursors of behaviour change and mediators of outcome as well as a platform for developing an agreed plan of action. Discordant GPs' and patient's expectations may result in dissatisfaction and poor consultation outcome (Farooqi, 2005). Primary care consultations with higher levels of patient-GP concordance were associated with greater compliance (Kerse et al., 2004) and more effective communication (Liaw et al., 1996). The discrepancy between patients' and GPs' beliefs about the health care plan is an important determinant of trust, satisfaction and adherence to treatment (Krupat et al., 2004). Patient-GP agreement about the content of the consultation was associated with higher satisfaction

(Fagerberg et al., 1999), while patients who disagreed with their GP about management of their back pain were less satisfied with their medical management, and catastrophised more about their pain (Azoulay et al., 2005).

Although most previous research tends to indicate that low patient-GP agreement could have a negative impact on the consultation outcome, firm evidence about the potential impact of this agreement on different aspects of the consultation is still lacking. Facilitation of this mutual understanding and agreement between patients' and GPs' expectations is not such a simple task; therefore there should be strong evidence to justify the time, effort and resources that would be needed to promote this agreement. Very few studies have addressed this issue and there is a need for research investigating the potential impact of patient-GP agreement (Perreault and Dionne, 2006), as understanding and facilitating such an agreement would benefit outcomes in primary care (Kerse et al., 2004).

As can be inferred from analysing the questionnaire data in the current study, most of the patients expected their GP to listen, be warm, and provide information and adequate explanation during the consultation, with the majority expecting their GP to be able to help with their back pain. Although more than 80% of the patients believed the consultation is of appropriate duration, only about half of them expected the GP to ask about their expectations at the start or about unmet expectations at the end of the consultation; accordingly, patients were less likely to express their expectations to the GP. More than two thirds of the patients expected physical examination and a proper history taking, which would include discussing the patients' fears and the impact of pain on social life, yet, patients were less likely to expect the GPs to discuss their own beliefs and management ideas during the consultation. Other common patients' expectations were referral, education, shared decision making and information about prognosis, while the least reported expectation was for prescriptions.

Similarly, GPs reported that a typical scenario for back pain consultation in primary care would predominantly include listening to the patient, being warm, providing information, explanation, and education, physical examination, taking full history of the back problem, which would include exploring the impact on social life, discussing patients' beliefs and management ideas and finally, involving patients in decision making, with two thirds of the GPs expecting to prescribe medication during the consultation. Almost all of the GPs expected to be able to help their patients with the back pain, but only two thirds believed the consultation is of adequate duration for them

to be able to cover all relevant aspects. Expectations for referral and investigations were scarce among GPs.

The following section discusses the findings of the EQ survey, identifies the significant areas of matched and mismatched patients' and GPs' expectations, and discusses the implications of these findings with respect to the back pain consultation.

6.2.2 EQ results: The matching of patient-GP expectations

Interpretation of the agreement coefficients showed that there was a high to moderate patient-GP agreement (P_o> 60%) regarding two thirds of the questionnaire items. The remaining seven items revealed low patient-GP agreement; those were the items related to referral, test ordering, prescriptions, the likelihood of the GP discussing the patients' own beliefs about the problem, and their ideas about the management as well as items related to patients expressing their expectations to the GP during the consultation and GPs asking about any unmet expectations at the end of the consultation (Table 16: page 122). The following section is dedicated to discussing three major areas of significant divergence and mismatch between patients' and GPs' expectations as suggested by the findings of the EQ, and its implications for the back pain consultation.

6.2.2 1) Patient-GP disagreement regarding "seeking patient's perspective"

It was previously suggested that a 'good' back pain consultation should include proper history-taking, thorough clinical examination, provision of understandable information about the problem and explanation of the cause of the pain, receiving reassurance, discussing psychosocial issues, sharing what can be done, and most importantly, the patient to be taken seriously during the consultation, i.e., to be heard and believed (Lærum et al., 2006). Generally speaking, the results of the current study showed that patients and GPs have mutual agreement regarding these suggested features of a 'good' back pain consultation, with aspects related to GP's characteristics (e.g., being warm and listening), and clinical attitude (e.g., history taking, physical examination, and provision of adequate information and education) showing the highest patient-GP agreement (highlighted in green in Table 14: page 118, and Table 16: page 122).

Some other features, however, seemed to lack this agreement. The 'good' back pain consultation model emphasised the importance of a patient-centred approach, i.e., seeking patients' perspectives and preferences during the consultation and sharing with them what can jointly be done to manage the problem (Lærum et al., 2006). The study

results revealed these to be the main areas of dissent between patients and GPs. Patients and GPs had mismatched expectations regarding the likelihood of the GPs discussing the patients' own beliefs about the problem and their ideas about its management. Examining the data from patients and GPs individually showed that only about half of the patients and two thirds of the GPs expected patients' beliefs and management ideas to play an active role in the consultation and management approach. However, there was very high patient-GP agreement regarding the importance of involving patients in the decision-making process.

Lack of a clear explanation of the problem and the whole uncertainly about the most adequate diagnostic and management plans for the diversity of patients presenting with back pain add a considerable degree of complexity to patients' beliefs, perceptions and ideas about the problem and its management, which makes it even harder for GPs to address these beliefs and to explore patients' own management ideas. If GPs report that they are unlikely to address patients' beliefs and ideas during the consultation, and patients state that they do not expect their GPs to explore their beliefs and management ideas, then maybe they are both missing an important element that might have the potential to enhance the consultation process and improve the ensuing experience. Raising the awareness among GPs and patients about the importance of addressing patients' beliefs and management ideas could be useful, for they act as potential influences on adherence, precursors of behaviour change and mediators of outcome (Main et al., 2010), and addressing them would emphasise a patient-centred approach, where GPs are actively seeking the patient's perspective in terms of thoughts, worries, beliefs, ideas and preferences (Lærum et al., 2006).

Although this situation seems very complex, a closer investigation of the underlying dynamics of the back pain consultation might help add clarity to the picture. Back pain management in general practice has always been seen as challenging and unrewarding for GPs (Skelton et al., 1995[a]; Zenz and Strumpf, 2007). Implementation of an effective bio-psychosocial management approach for this condition has been shown to be problematic (Breen et al., 2007), with many GPs believing they have very little to offer back pain patients (Skelton et al., 1995[a]). Over the last few decades, research in primary care has focused on understanding factors influencing the quality of health care, and ways to optimise expectations and enhance satisfaction with back pain consultations. Recent evidence suggested a significant mismatch of patients' and GPs' perceptions regarding the best approach for back pain management, i.e.,

biomedical/biomechanical versus bio-psychosocial (Allegretti et al., 2010). Several factors interact together to form barriers for proper bio-psychosocial management of back pain in general practice; these factors might be patient-related (education, socio-economic class, knowledge and previous experience), disease-related (yellow flags, severity, chronicity, impact on job or quality of life) or GP-related (clinical and inter-personal skills, workload and time constraints). Patients' participation in the consultation is believed to improve patient-GP communication as well as other patient outcomes (Middleton et al., 2006). The importance of considering patients' views in developing management and educational programmes is well documented (Skelton et al., 1996) and it is broadly accepted that health care decisions should integrate research evidence and patient preferences in order to achieve better health outcomes (Barratt, 2008). In addition, addressing patients' specific concerns and mistaken beliefs during the consultation will facilitate the development of an agreed management plan (Main et al., 2010). However, the practicalities associated with promoting this aspect of addressing patients' beliefs and management ideas could be challenging for most GPs, and as the findings of the current study showed, there is a significant mismatch between patients' and GPs' expectations concerning the likelihood of the GPs exploring the patients' perspectives during the back pain consultation.

Clearly, it takes time to explain patients' inappropriate concepts and beliefs or discuss their management ideas and expectations (Weiner and Nordin, 2010), which might explain the identified mismatch of patient-GP expectations regarding exploring of the patients' perspectives. GPs might be reluctant to discuss patients' beliefs and ideas about the problem and its management due to time constraints and heavy workload in today's busy general practice. Evidence suggested a significant mismatch between patients' and GPs' perceptions with regard to whether GPs should have enough time to listen, talk and explain to their patients during the consultation, mainly due to GPs' own interests with respect to workload, time management and practice management (Jung et al., 1997). GPs currently face a challenging dilemma of the need to discuss patients' beliefs and management ideas during the consultation, and the perceived pressure of the patients' increased expectations on GPs (Farooqi, 2005). It was suggested that an essential part of the consultation should be allowing patients' understanding of their illness to be spoken and received (Churchill and Schenck, 2008), and that every clinical encounter should begin with a determination of the patient's beliefs about their problem (Main et al., 2010), in order for them to be actively involved in management of their problems ((Farooqi, 2005), and for the GP to identify patients' worries about the

problem and own thoughts of what might help them; yet several barriers interfere with this process, mainly patients' and GPs' attitudes (Churchill and Schenck, 2008).

The specific condition itself might represent a major barrier for adequate recognition and discussion of patients' beliefs. Back pain is a symptom, where it is not always possible to identify a direct causality (Weiner and Nordin, 2010), which puts extra burden on GPs. For GPs to be able to challenge patients' inappropriate beliefs and misconceptions, they would clearly need a plausible and appropriate explanation of the problem, which, most of the time, they do not have. GPs' efforts to involve patients in decision making and to discuss patients' beliefs and ideas, as part of the bio-psychosocial model, would then be compromised. Moreover, cultural and socio-economic influences modulate the meaning and the expression of pain (Weiner and Nordin, 2010), and consequently patients' beliefs about their problem; thus patients' educational level, socio-economic status, knowledge and previous experience have a major impact on the extent to which GPs would be able to discuss patients' beliefs and integrate patients' ideas into the management plan. Yet, the bottom line is that patients bring to the consultation a particular level of expertise, and after all, it is about them (Churchill and Schenck, 2008), and therefore, it is important to empower patients to take responsibility for managing a condition that often features recurrence or chronicity (Weiner and Nordin, 2010). As the philosopher and physician Albert Schweitzer stated *"Each patient carries his own doctor inside him".* Ignoring the patients' perspective might render the patients frustrated, because they consider themselves to be the best judges of what is good for them (Zenz and Strumpf, 2007).

6.2.2.2) Patient-GP disagreement regarding "referral and investigations"

Likewise, in this study, patients and GPs seemed to consistently disagree about the need for referral and investigations. Recent evidence suggested a significant gap between patients' and GPs' expectations with regard to referral and tests (Zenz and Strumpf, 2007). Patients' expectations for care commonly include referral and diagnostic testing as principal items on the agenda (Jackson and Kroenke, 2001; Kravitz, 2001), with about half of them expecting to be offered these options during the consultation (Zenz and Strumpf, 2007). GPs may have a differing set of expectations and might see patients' expectations (such as the need for specialist investigations) as clinically unjustified, inappropriate or unnecessary (Main et al., 2010), which would create this state of mismatched expectations. GPs seem to find it hard and very time consuming to try to get people to adjust their expectations if they were deemed

unjustified or not needed, merely because patients have made up their mind beforehand about what they want (Carlsen and Norheim, 2005). GPs acknowledge guideline recommendations, but implementation is not always possible due to the perceived importance of maintaining the patient-GP relationship, which relies on effective negotiation of mutual perceptions and expectations (Corbett et al., 2009).

Surprisingly, despite the patient-GP disagreement about aspects of referral and investigations, in this study, the data revealed that such disagreement did not influence patients' expectations regarding the ability of their GPs to help with their pain. This might be explained in terms of GPs' general clinical attitude and practice style; it could be argued that GPs were able to address patients' inappropriate expectations for tests and referral by offering alternatives, for example, adequate explanation, information and education (Hamilton et al., 2007). Thus, although patients and GPs had unmatched expectations for referral and tests, it did not affect the consultation outcome, and patients still expected their GP to be able to help. This supports the suggestion made in this study in Chapter 3 (Met-Matched conceptual model; page 42), which suggested that instead of responding to patients' unjustified expectations, GPs could address them with alternatives that would still preserve a healthy patient-GP relationship and reduce patients' unmet expectations while help refine future ones.

Educating GPs on exploring patients' expectations during the consultation would enable them to identify patients' unjustified or inappropriate expectations, and subsequently address them (Peck et al., 2004; Middleton et al., 2006), whether by negotiation, explanation or offering alternatives, and thus would have the potential of reducing patients' unmet expectations and enhancing their satisfaction (Jackson et al., 2001). Exploring and negotiating patients' expectations during the consultation could particularly help address the issue of mismatched patient-GP expectations with regard to referral and investigations (Main et al., 2010), and could help refine patients' future expectations and promote agreed patient-GP expectations in subsequent consultations (Weiner and Nordin, 2010). Using specific questioning techniques designed to elicit the patients' input during the consultation, in terms of their beliefs, worries, ideas and expectations might help close the gap between patients' expectations and GPs' actions, and could help GPs understand what patients hope to gain from the encounter (Zenz and Strumpf, 2007).

6.2.2.3) Patient-GP disagreement regarding "expectations communication"

Another main area of disagreement that, from a practical point of view, represents a major challenge and barrier for adequate management of back pain specific expectations in primary care is the issue of expectations communication. In this study, GPs and patients seemed relatively confused about how to manage this aspect, with some GPs reporting the need to explore patients' expectations and identify unmet ones during the consultation, while others stating that they do not routinely do so. Patients as well seemed to be reluctant to express their expectations to their GPs, perhaps to avoid tension and pressure on GPs, or maybe they did not actually have any pre-consultation expectations and they were leaving it to GPs to decide what is best for them (Hamilton et al., 2007). This is quite challenging for GPs; to actually distinguish between patients with specific expectations and those with none would be quite difficult. Perhaps the best way to address this issue is for GPs to ask patients straight off about their expectations during the consultation. It was suggested that the consultation should start with clarification of the patient's objectives for the consultation (Main et al., 2010). Weiner and Nordin (2010) suggest that expectations should be elicited in the first medical encounter, with adequate time spent on discussing inappropriate ones, so that future visits would be dominated with appropriate and agreed expectations. To achieve this goal and to enable and encourage patients to express their expectations and concerns, a therapeutic climate that is based on encouraging self-disclosure and trustworthiness needs to be established (Main et al., 2010).

It was suggested that patients will often have a clear set of expectations and explicit reason(s) for the consultation (Main et al., 2010). In the current study, however, there was a significant disagreement between participating patients and GPs with respect to the likelihood of the patients expressing their expectations to the GP during the consultation. Furthermore, it was reported that GPs are generally inaccurate in detecting patients' expectations of the consultation (Ring et al., 2004). Rao et al. (2000) suggested that many of the patients' expectations may be undetected, and subsequently rendered unmet, leading to adverse effects on the outcome and satisfaction with care. Asking the patient about the reason why they sought medical help is a key step in consultations, which is often not achieved (Middleton et al., 2006).

Unmatched patient-GP expectations might be, in most cases, due to the fact that every party (patient and GP) is not fully aware of what to expect during the consultation. To promote the matching of patients' and GPs' expectations, each of them

must know what the other would expect from them; accordingly, it is extremely important to elicit and identify these expectations during the consultation. Patients, who were encouraged to make their agenda explicit in consultations, were more satisfied with the depth of the GP-patient relationship (Middleton et al., 2006). Failure to elicit patients' expectations and to clarify the reason for the consultation may lead to iatrogenic confusion and distress (Main et al., 2010), and consequently, patients reporting that they have been unable to discuss their concerns with their GPs and that their needs were not met (Middleton et al., 2006); a 'frustrated patient' is the most likely outcome of such approach (Zenz and Strumpf, 2007)

GPs' education and training about identifying patients' consultation agendas and eliciting patients' expectations during the consultation have been shown to have favourable influence on the consultation (Middleton et al., 2006). This would enable GPs to effectively respond to patients' justified expectations (if they have any), or otherwise, identify and address unmet ones. If a mismatch of patient-GP expectations is identified, management of the patient's expectations will be a critical part of the consultation, as will be the identification of mistaken or unhelpful beliefs, which may impede recovery (Main et al., 2010). Clinical negotiation would be an essential tool when it comes to discussing patients' expectations (Weiner and Nordin, 2010).

On the other hand, if the patients are seeking medical help without a specific set of expectations and with a high level of reliance on their GPs (Allegretti et al., 2010), asking them about their expectations would serve as a platform for putting the responsibility back to patients, and would enable GPs to involve them in the decision making process, and thus giving them the chance to be actively involved in their care rather than the GPs taking all the responsibility of managing the problem, with the patients as a passive recipients of the service. Better back pain service might be achieved by adopting management approaches that are based on a combination of clinical evidence, professional expertise as well as patients' and GPs' expectations and preferences. Taking into consideration patients' beliefs, ideas, concerns and expectations has the potential for promoting better care for back pain in general practice.

6.2.3 Potential implications of the results for the consultation

Based on Table 14 (page 118), it would be possible to extract and analyse some examples of GPs' clinical attitudes and practice styles in primary care. For example, among participating GPs, D7 works in a large urban practice (with another 5 GPs) for

an average of 40 hours/week, and has been practicing for 30 years. D7's approach to managing back pain involves being warm and friendly [Q4], showing interest [Q5], discussing patients' fears and doubts [Q6], as well as exploring the impact of pain on social life [Q7]. In the consultation, D7 would expect to provide adequate explanation of the problem [Q13], information [Q14] and education [Q15].

However, due to time constraints [Q20], D7 is unlikely to take full history [Q8] or conduct physical examination [Q9], and he do not expect to have enough time to discuss the patients' own beliefs about the problem and its causes [Q17], or their own ideas about management of the problem [Q18]. Instead, he would offer referral [Q10], order some tests or investigations [Q11], or prescribe some medication [Q12]. Yet, by large, there is a significant patient-GP agreement that D7 would be able to help his patients with their back pain [Q21].

On the other hand, D4 works with another two GPs in a small rural practice of about 3600 registered patients; D4 works for an average of 20 hours/week and has been practicing for 25 years. Generally speaking, D4 would follow the same approach for management of back pain like D7, except for the following differences: D4 expect the consultation to be of adequate duration, and thus expect to be able to take full account of the relevant history of the back problem, conduct a physical examination, and discuss the patients' own beliefs about the problem and their own ideas about management; meanwhile, D4 is unlikely to order tests or make referrals. Again, there seems to be agreement that D4 would be able to help patients manage their pain. This analysis of those two different forms of presenting clinical attitudes might suggest that some specific aspects, such as time constraints, might have a critical impact on the overall management approach and might influence the whole process of health care provision. Nevertheless, GPs should be aware that incorporating a quick comprehensive physical examination and history taking need not take more than 7 minutes; yet, it would enable GPs to better address the patients' needs, rule out serious underlying pathology and avoid unnecessary referrals or tests.

6.2.4 Summary

Analysis of the questionnaire data showed that the 21 expectation items were evenly subdivided into three main classes: Firstly, items with high patient-GP agreement (GP warm and friendly, showing interest, providing explanation, information and education, engaging patients in decision making as well as expectation that GP

would be able to help); secondly, items with moderate agreement (GP taking full history, conducting physical examination, providing information on prognosis, enquiring about patients' expectations, fears and doubts and impact of pain on social life, as well as expectations of adequate consultation time); and finally, items with low agreement (patients expressing their expectations and the GP asking about unmet ones, referral, test ordering, prescriptions, discussing patients beliefs and management ideas). Further understanding of the underlying dynamics that might trigger this mismatching of patient-GP expectations in relation to this later set of expectation items might help improve the consultation, by reducing patients' unmet expectations, guiding future expectations, enhancing communication, concordance, adherence and satisfaction, and finally, optimising the use of health care resources. Such factors act as strong mediators and predictors for achieving the ultimate goal of the medical consultation, that is, improved objective clinical outcome measures, i.e., pain relief, return to work, increased functional capacity and reduced disability.

6.3 Discussion of the findings of the qualitative part: The perceived importance of matched expectations

As previously reported, semi-structured recorded telephone interviews were conducted with 6 patients and 6 GPs to investigate the perceived importance of matched expectations regarding specific aspects of the back pain consultation. Once significant aspects of convergence and divergence between patients' and GPs' expectations were identified by the questionnaire survey, it was felt legitimate and necessary to try to seek further understanding of the role of this agreement/mismatch in shaping the patient-GP relationship, interaction and communication within the consultation. The importance of matched expectations, as perceived by patients and GPs, was explored in this study using telephone interviews in a series of three successive steps of enquiry, which explored the consultation agendas, the perceived importance of matched expectations, and barriers to this matched state. The following section discusses the findings of the telephone interviews with respect to each of these three areas of enquiry.

6.3.1 Patients' and GPs' consultation agendas

The most important theme, identified from the patients' and GPs' interviews in relation to the first enquiry about the consultation agendas, was the traditional dilemma between the biomedical and psychosocial models. GPs seemed to be split between their preference for a rigorous biomedical approach to back pain management in general practice and the need to understand the back pain within the wider context of the

patient's life. Adopting a bio-psychosocial approach seemed to be the most pragmatic and plausible middle solution, but it seems like it still has a long way to go until the practical application of this model is fully implemented and optimised for back pain management in primary care.

There is a good evidence to suggest that the bio-psychosocial management of back pain in primary care is perceived by GPs as problematic, difficult and unrewarding (Skelton et al., 1995[a]; Breen et al., 2007); the current study, however, presents evidence supporting the role of this model in back pain care with respect to this sample of GPs. Even though the telephone interviews with GPs did not reveal a definitive preference with respect to the biomedical versus psychosocial model, integration of the qualitative interview data with the quantitative data from the EQ suggests that GPs valued all principal components of the bio-psychosocial approach, as they had high to moderate agreement with their patients with regard to expectations of showing interest, being warm, asking about the impact of pain on social life, discussing doubts and fears (psychosocial aspects), as well as taking full history, conducting thorough examination and providing relevant information (biomedical aspects).

In fact, two different studies comparing patients' and GPs' perceptions about their consultation priorities found that aspects such as GPs' personal interest in the patient as a person and in his/her life situation, and helping patients with their emotional and psychological problems related to the health problem were more important for GPs than for patients (Jung et al., 1997; Vedsted et al., 2002), which suggests that the picture is not as clear cut as originally thought. The current study suggests that GPs dichotomy between the biomedical and psychosocial approach might predominantly be attributed to the increasing pressures on GPs rather than any personal preferences for a specific approach; therefore, addressing such challenges and pressures, for example, heavy caseload, time constraints, and patients' unjustified or unrealistic expectations, could have the potential of facilitating a more effective bio-psychosocial approach to back pain management in primary care.

Conversely, as might be expected, back pain patients valued a psychosocially dominated approach, where GPs would take most of the consultation time to listen to the patients' stories with regard to the impact of pain on their lives, mainly the social, psychological and job-related aspects. This finding is well supported in the literature. For example, previous studies suggested that the most common patients' expectations were GPs' understanding, showing interest, and discussing problems or doubts in the

consultation (Kravitz et al., 1994; Skelton et al., 1996; Ruiz-Moral et al., 2007). Evidence suggests that, in general, patients' expectations of information or support are more valued than technical or medical interventions, such as tests or prescriptions (Williams et al., 1995; Ruiz-Moral et al., 2007). Evidence also suggests that patients' perceptions regarding the effective management of the psychosocial issues during the consultation was mainly related to the ability of the GP to establish a possible correlation (in both directions) between daily life situation, including job, family, coping and quality of life aspects, and the patients' back pain (Lærum et al., 2006).

A recent study suggested a significant discordance and mismatch of patients' and GPs' perceptions with regard to the best approach for back pain management in general practice, i.e., biomedical/biomechanical versus bio-psychosocial models of management (Allegretti et al., 2010). An important cause of mismatched expectations was suggested to be attributed to the different ways of interpreting symptoms, illnesses and needs during the consultation from the patients' and GPs' perspectives, where GPs seek scientific explanations based on scientific models that pay attention to symptoms as clues to diagnoses, while patients' perceptions of symptoms are mainly based on beliefs about the cause and seriousness that are derived from experiences, family and friends or cultural beliefs (Fagerberg et al., 1999).

Moreover, much like back pain patients, patients with medically unexplained symptoms valued emotional support from their GP much more than specific somatic interventions (Salmon et al., 2005), suggesting that the role of GPs dealing with back pain patients in general practice has now shifted beyond an absolute biomedical focus to a more comprehensive bio-psychosocial management strategy. The bio-psychosocial model focuses mainly on illness rather than on disease and asserts that a person's experience of illness is influenced by psychological and social factors as well as physical factors (Cherkin, 1998). Unlike the biomedical model, which is entirely based on a unidirectional relationship between biological predispositions and the development of a medical disease, the bio-psychosocial approach takes into account the interaction between various biological, psychological and social predispositions that contribute to the expression of the disease and symptoms (Drossman, 1998); therefore, this model is believed to fit perfectly with the nature of the back pain problem and its associated effects on the patients lives.

Cherkin (1998) emphasised that, despite the explosion of primary care-relevant research on back pain in the past few years, it has not adequately focused on

understanding, developing and expanding such an existing but neglected paradigm, the bio-psychosocial model. Nearly twenty-five years ago, in his award-winning paper, Waddell (1987) argued that the medical model had failed to provide an optimal management of the back pain problem and that if the resulting epidemic of back disability was to be stopped, the importance of psychological and social factors would have to be appreciated (Cherkin, 1998). It was suggested that GPs should pay more attention to the psychosocial issues, and particularly how the back pain affects various roles in life, especially that psychosocial factors are deemed to be important predictors of prognoses and clinical course of back pain (Lærum et al., 2006; Main et al., 2010).

Waddell (1987) argued that a bio-psychosocial model could be used as an operational clinical approach for back pain management, based on a series of implications and analyses. He suggested that distress and illness behaviour are secondary to the physical disorder, and they all interact to determine the outcome of the treatment and they can also combine to produce disability; he also ascertained that work loss and return to work are determined more by social factors than by physical disease. He concluded that an approach that can combine the scientific medical treatment of the disease with human care of the patient would be the most appropriate for caring for back pain patients. Cherkin (1998) confirmed such a statement and suggested that if research is to lead to substantial improvements in primary care for back pain, the focus must be broadened to adequately address the barriers to implementations of the bio-psychosocial model.

The present study, endorsed by its findings and supported by previous literature, suggests that GPs do have the willingness, conviction and motivation to apply the more comprehensive and effective bio-psychosocial approach to back pain management, except for the acknowledged barriers to the practical implementation of such a model in today's busy general practice, and particularly as patients become more challenging with regard to their health. More research is needed to identify possible barriers and potential facilitators of the bio-psychosocial model, and approaches to enhance its practical implementation in general practice need to be investigated.

6.3.2 The perceived importance of matched expectations

The main argument addressed in this part of the research study was whether a state of matched expectations would be perceived by patients and GPs as important for the back pain consultation. Several implications were made in previous studies

investigating the patient-GP relationship, concordance, communication and satisfaction in a wide array of settings and for a range of conditions (review page 30) to suggest that patient-clinician agreement could be detrimental to patient care and outcomes (Starfield et al., 1981; Perreault and Dionne, 2006). Whether this applies in the context of back pain management in general practice was the main enquiry of this part of the study.

Analysing the data from the patients' and GPs' interviews, with respect to the question about the perceived importance of matched expectations, revealed several emerging themes. All twelve participants (6 patients and 6 GPs) agreed that a state of matched-patient GP expectations could improve the overall experience with the back pain consultation, and could potentially enhance several principal components of the encounter, including communication, empathy, adherence and satisfaction.

The first emerging theme, which was shared by patients and GPs equally, was the importance of matched expectations for better communication and more effective shared decision-making. The discipline of general practice has espoused a patient-centred model of the GP-patient interaction, in which the patient's point of view is actively sought by the GP (Stewart, 1984). According to the collected data, patients and GPs agreed that the matching of their expectations implied that the process of interaction within the consultation was optimal; that both viewpoints - patients' and GPs' - were considered, and that a jointly-agreed plan was formulated based on shared decision making. This was considered of upmost importance for patients and GPs, as previous studies have shown that patient-GP agreement and shared decision making improve compliance and success rate of treatment (Weiner and Nordin, 2010), and that patients' expectations can be effectively managed during the consultation through informing, negotiating, educating and reasoning with the patient (Carlsen and Norheim, 2005), in such a way to achieve patient-GP agreement.

The data suggests that communication and matched expectations form a closed-loop feedback cycle, where better communication during the consultation could promote the matching of patient-GP expectations. This agreement would, in turn, facilitate and create a perception of having effective communication and interaction, which is likely to influence future expectations and communication in the subsequent consultations. Therefore, a higher degree of matching of patient-GP expectations could be expected as communication becomes more improved and vice versa. This is consistent with previous findings stating that, in order to improve patient-doctor communication, doctors should put more emphasis on promoting the agreement

between patient-doctor expectations in primary care consultations (Zebiene et al., 2008). A counter relationship was also supported, where good communication was suggested to facilitate negotiating an agenda and quicker GPs' recognition of the real reason for the visit, which could enhance the matching of patient-GP expectations (Frankel and Stein, 1999). In addition, it has been stated that patient-GP concordance could be enhanced by improving communication, and that this concordance can be used, by inference, as a relevant, practical and useful indicator of effective patient-GP communication, which is deemed to have significant implications on the quality of care (Liaw et al., 1996).

The second emerging theme with respect to the importance of matched patient-GP expectations, which was again shared by patients and GPs, was adherence to the GP's recommendations. Patients and GPs agreed that a logical 'agreement-adherence' process exists and plays a crucial role throughout the consultation. This process would possibly follow these sequential logical steps: good communication, expectations negotiation, mutual understanding, shared decision making, matched expectations, positive perceived experience, satisfaction, adherence and possibly favourable outcome (Figure 16). The study suggests that a malfunction or breakdown of any of the links in the first set (agreement) is likely to adversely affect one or more of the items in the second set (adherence), and could possibly influence the overall health care outcome, in terms of quality and perceived effectiveness.

It was also suggested that effective communication, negotiation and patient-GP agreement about the management plan would be associated with higher patients' compliance and better outcome (Gask and Usherwood, 2002). Lower satisfaction is assumed to be associated with weaker intentions to adhere to the advice given, and therefore less symptom improvement (Bell et al., 2002). It was reported that, in the event of unmatched expectations, patients were likely to adhere to GPs' recommendations if they were persuaded by their GPs that they did not need such interventions and if they agreed with the GPs during the consultation (Hamilton et al., 2007). The findings of this study supports the implication made in previous study (Maly et al., 2002) suggesting that assessing levels of patient-GP agreement and understanding the reasons for disagreement may facilitate care better tailored to the patient, increase adherence to recommended medical care, and ultimately have a positive effect on health outcomes.
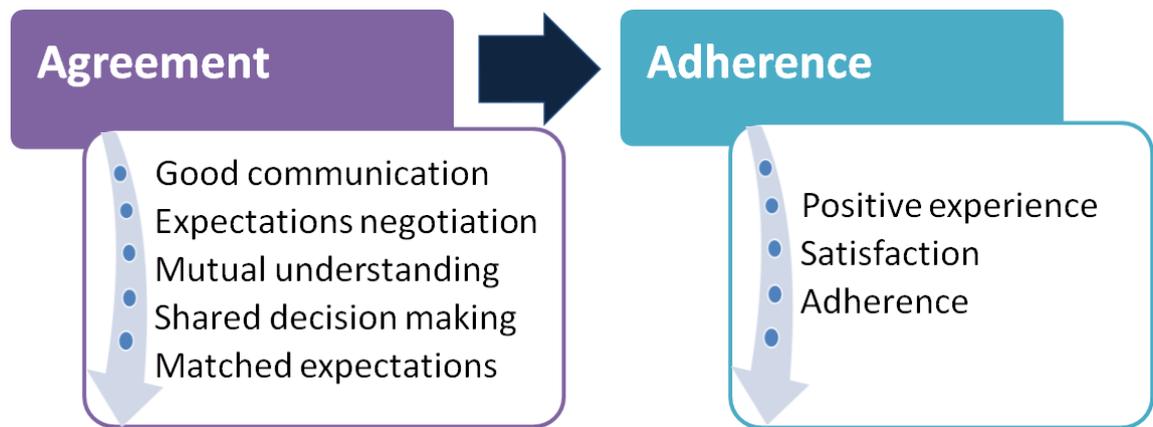
Figure 16 The potential relationship between agreement and adherence

Adherence to treatment is a key link between process and outcome in health care, as poor compliance may have a major impact on the clinical outcome of care (Vermeire et al., 2001). The patient-GP relationship, especially with regard to their agreement, is thought to be essential to appropriate GPs' practice and patient health behaviours (Maly et al., 2002), and seemed to be an important variable in adherence (Vermeire et al., 2001). The association between patient-GP agreement and adherence to management and medication plans is considerably supported by previous studies (Bass et al., 1986; Maly et al., 2002; Vedsted et al., 2002; Kerse et al., 2004). Patient-GP agreement on health-related perceptions and attitudes with regard to the consultation appeared to be a powerful predictor of patient adherence to recommended health care (Maly et al., 2002). Primary care consultations with higher levels of patient-GP agreement have been found to be associated with one-third greater medication compliance (Kerse et al., 2004). Consultations in which GPs implemented a patient-centred approach were related to significantly higher compliance and satisfaction (Stewart, 1984). Maly et al. (2002) suggested that it is the patient-GP agreement, rather than individual patient or GP perceptions that appears to determine GPs' and patients' actions on recommended health care; they concluded that efforts to facilitate physician-patient concordance may improve primary care outcomes.

The association between agreement and satisfaction was the third emerging theme mutually shared by patients and GPs with respect to the perceived importance of matched expectations. Following on from the previous two themes, it might be intuitively obvious that participants perceived the agreement of patients' and GPs' expectations as a strong mediator of better communication, greater adherence and higher patients' and GPs' satisfaction with the consultation, in terms of process (communication) and outcome (adherence).

The literature pertaining to the relationship between matched patient-GP expectations and satisfaction is scarce, but what scant evidence there is suggests that patient-GP agreement about the content of the consultation was associated with higher satisfaction (Fagerberg et al., 1999), while patients who disagreed with their GP about the management plans were less satisfied with their medical care, and catastrophised more about their pain (Azoulay et al., 2005). A few previous studies suggested that the level of agreement has been positively associated with patient outcomes, in terms of higher satisfaction (Fagerberg et al., 1999; Azoulay et al., 2005; Staiger et al., 2005), with greater levels of satisfaction being achieved when the patient and the GP have agreed upon more topics with regard to the content of the consultation (Fagerberg et al., 1999). On the other hand, another study by Krupat et al. (2001) found that, although patient-GP agreement was associated with higher levels of trust, it did not significantly correlate with higher visit satisfaction. These findings, however, were limited by the fact that the study investigated specific consultations which involved a targeted subsample of patients who had an ongoing or worsening problem that concerned them; in which case, satisfaction could have been significantly compromised by the worsening condition, irrespective of how matched were the patient-GP expectations during the consultation.

Another emerging theme that was unique to the GPs' interviews was the association between matched expectations and empathy. GPs reported that agreement with their patients during the consultation and having the same wavelength of anticipation would improve the communication, convey a message that the GP has been attentively listening and reflect an overall perception of the GPs' empathy. To facilitate effective patient-GP interaction, a communication framework was previously suggested based on four habits that are thought to enhance clinical communication during the consultation. Building on evidence-based knowledge about which behavioural attributes work well in the context of the medical consultation, the four habits framework comprised of four main elements, namely, (1) 'investing in the beginning' (i.e., how patients should be met and history taken), (2) eliciting the patient's perspective, (3) demonstrating empathy, and (4) 'investing in the end' (i.e., providing information, checking patient understanding and encouraging adherence) (Frankel and Stein, 1999; Gulbrandsen et al., 2010). This supports the findings of the present study that good communication, listening, eliciting the patient perspective and empathy are closely related to the outcome, in terms of mutual understanding and adherence.

Empathy is a provider attribute that has been a topic of increased clinical interest, particularly as it relates to pain (Tait, 2008). Patients' enablement was proven to mainly relate to patients' perceptions of the GP's empathy (Mercer et al., 2002). There is a general lack of research on the role of empathy in terms of clinical outcomes in primary care (Mercer and Reynolds, 2002). The relationship between patient-GP agreement and empathy has not been previously studied, but there is a good evidence to suggest that patient-centred communication and interaction, in terms of how well the GP expressed interest in what the patient said, gave signals of empathy and active listening, and believed the patient was in pain, were perceived as extremely important for back pain patients (Lærum et al., 2006). Another study suggested a potential relationship between empathy and agreement, where it was advised that GPs should elicit patients' perceptions of the illness and associated expectations, learn methods of active listening and empathy, give clear explanations, check the patient's understanding, and negotiate a treatment plan that could promote their mutual agreement (Vermeire et al., 2001). Moreover, empathy has been suggested to enhance the patient-GP relationship and to improve both patient and GP satisfaction, which makes it a key part of the consultation (Mercer and Reynolds, 2002).

On the other hand, patients, but not GPs, described a strong relationship between a state of matched patient-GP expectations and perceptions of trust. This is in agreement with previous evidence, which suggested that patients who agreed with their GPs during the consultation were more likely to trust and endorse them (Krupat et al., 2001). Patients reported that continuity of care brought on perceptions of confidence and trust in their GPs, which were perceived as strong mediators of patient-GP agreement and matched expectations. Continuity is an essential aspect of the health care, particularly for recurrent and long-term conditions such as back pain. Continuity of care has been associated with improved preventive care, GPs' understanding of the psychosocial aspects of patient care and satisfaction with care (Kerse et al., 2004); such aspects are regarded as extremely important in the context of back pain care. Continuity of care was a significant emerging theme for patients but not for GPs, which reflected a discrepancy between patients' and GPs' perceptions regarding the value of this feature of the health care. This is consistent with previous evidence, which suggested that patients give higher priority than GPs to the continuity of care (Jung et al., 1997; Vedsted et al., 2002; Zenz and Strumpf, 2007).

6.3.3 Barriers to a state of matched expectations

Patients and GPs identified several barriers and obstacles to a state of matched patient-GP expectations. They jointly agreed that heavy caseload and time constraints are among the main barriers to such an agreement. These challenges are common issues facing patients and GPs in primary care in general and not particularly exclusive to back pain management. Evidence suggested that workload and the growing demand from patients and GPs for more time for the consultation are among the major constraints on the delivery of holistic consultations that can ensure an optimal level of patient-GP interaction and agreement (Mercer and Reynolds, 2002).

GPs stated that lack of consultation agendas or different agendas could compromise the matching of patient-GP expectations. Expectations are very complex and expression or eliciting of expectations during the consultation is not such an easy task. The literature suggested that patients and GPs might come to the consultation without a prior set of expectations, which is often called unformed expectations; according to Thompson and Sunol (1995), this occurs when the individuals are unable or unwilling, for various reasons, to articulate their expectations, possibly because they do not have any, or find it too difficult to express them, or do not wish to reify them, due to fear, anxiety or conformity to social norms. Qualitative studies carried out in the UK found that participants' expectations of the consultation were not well formed (Crow et al., 2002). Not all patients will prefer to be involved in taking critical decisions about their care, leaving it to the expert judgement of their GP. Some patients - such as the elderly, for example - may desire a GP whose style is more structured and who provides more guidance (Krupat et al., 2001). Other patients may prefer to leave the whole decision-making thing to the GP (Hamilton et al., 2007).

Evidence suggested that patient and GPs priorities differed regarding several aspects of the consultation (Vedsted et al., 2002), and that potentially controversial areas of general practice care do exist (Jung et al., 1997). A recent study suggested that patients and GPs might have different consultation agendas (Main et al., 2010), and exploring the patients' and GPs' perspectives revealed several shared themes and convergences, but also significant discordance and mismatch in their expectations and agendas (Allegretti et al., 2010). It is alleged that patients' and GPs' have different perspectives with regard to the main objective of the back pain consultation, where the main patients' objective is thought to be to ''get rid'' of the pain and to be ''the same as before'', while GPs are believed to focus mainly on rapid recovery or sufficient

information for self-managing of the problem and resuming all functional activities, including work (Weiner and Nordin, 2010). Such attitudes would make it difficult for the patient and the GP to have matched expectations, as one partner will have his/her agenda unrevealed or disregarded during the consultation, making it unfeasible to have optimal agreement that is based on mutual understanding, shared decision-making and jointly agreed management plans.

Culture, background and language were reported by GPs as a major constraint in understanding patients' expectations in order to potentially promote this state of matched expectations. Research efforts have been non-stopping trying to understand and expand the frontiers of knowledge with regard to expectations, antecedents affecting their development, determinants of their expression and factors affecting their adjustment or modification. The extent and nature of expectations are thought to significantly vary according to the socio-economic, cultural and demographic characteristics of the individuals (Crow et al., 2002). Such challenges require the GPs to be flexible, creative and adaptable when addressing patients' expectations. Other barriers to matched expectations were communication and lack of continuity of care; these were adequately discussed in the previous section, and their relationship and impact on the matching of patient-GP expectations have been demonstrated.

Finally, with regard to the qualitative data analysis, the analysis approach was considerably tight rather than loose, which might have blinded the researcher to some other important aspects and features that were not related to answering the research questions of interest (Miles and Huberman, 1994). These aspects were related to patient-GP communication and satisfaction, meeting patients' expectations, and role of negotiation within the consultation context, but not in relation to the patient-GP agreement, and thus were not given a lot of weight in the analysis. Tighter pre-structured designs are suggested to be a wise course for beginning researchers in qualitative research, as it can provide clarity and focus, and would prevent data and information overload (Miles and Huberman, 1994).

6.4 Reflection on the Met-Matched conceptual model

As previously reported, the 'Met-Matched' conceptual model presented earlier in this study (Figure 5; page 42) was developed to structure the underlying logic, hypothetical and theoretical grounds, justification and focus of the research questions posed for the current study. After identifying the significant areas of mismatch and

exploring the perceived importance of matched patient-GP expectations, it was deemed appropriate at this stage to relate the current study findings with the Met-Matched model to check its fitness and appropriateness regarding its use as a bridge to link the current research questions, methods and findings. The following section discusses the initial premises and implications suggested by the Met-Matched models in contrast to the present study findings.

This study developed and tested the newly designed EQ to measure the matching of patient-GP expectations of the back pain consultation. This was followed by telephone interviews to elicit insight into patients' and GPs' perceptions in relation to this matching. The Met-Matched conceptual model might be regarded as a potential vehicle for summarising and highlighting the key issues identified in the current study, i.e., patient-GP disagreement about expectations communication, the need for specific interventions that might be regarded as unjustified or inappropriate, and the importance of the patients' perspective in terms of their beliefs, perceptions and ideas. Based on connections and implications drawn from the current study findings, the model might be used by GPs as a platform and framework for optimising the process and outcome of the consultation. Indeed, the key findings of the current study strongly link to different parts of the conceptual model, with each part having its own potential clinical significance that could be used to improve back pain management in general practice.

For instance, the study revealed that eliciting, identifying and communicating expectations during the consultation were major areas of divergence between patients' and GPs' expectations. These issues could be addressed by the conceptual model in a more structured and practically relevant form that can help GPs to understand and effectively manage expectations during the consultation. The model started with the set of influencing factors that might affect the formation of expectations. A range of factors, including the intensity and duration of symptoms, functional impairment, perceived seriousness of symptoms, perceived vulnerability to illness, past experiences and transmitted knowledge, are thought to play an active role in the process of expectations formation (Kravitz et al., 1996). The severity of emotional distress, depression and pain-related disability are suggested to be important in shaping patients' expectations (Petrie et al., 2005). Expectations are also governed by one's understanding of the world, and form in relation to the social and cultural contexts within which one is located (Janzen et al., 2006). Raising the awareness of GPs about such a diverse set of influencing factors is of upmost importance for GPs to be able to

manage patients' beliefs and perceptions during the consultation. For example, patients who had severe or disabling symptoms frequently sought empathy or relief, whereas reassurance was the main expectations for those with frightening symptoms (Kravitz et al., 1996). Likewise, patients with high levels of depression or disability were more likely to report pain relief as the most valuable expectations, whereas patients with lower levels of depression or disability stated that explanation or understanding of their pain were the most valued expectations and that they would expect a cure or fix for their pain (Petrie et al., 2005; Zenz and Strumpf, 2007). The model relates to the study findings in that it can be used to draw GPs' attention to the importance of understanding different precipitating factors and their effect on the resulting set of expectations, and thus could help GPs to efficiently elicit, identify and address patients' expectations during the consultation, which were main areas of disagreement between patients' and GPs' expectations. It could also help them to discuss and address any patients' mistaken beliefs and ideas during the consultation.

The second part of the model described a very important dimension, which is the 'Appropriateness' of the formed expectations. As previously discussed, responding to patients' expectations may possibly improve the clinical encounter, but only if such expectations are healthy, justified and appropriate. Responding to inappropriate expectations bears the risk of encouraging misshaped and deformed future expectations, inadequate use of health care resources and compromised quality of care. As for the appropriateness of expectations, in the current study, analysing the proportion of overall agreement (P_o) and index of proportional agreement (P_{neg}) values revealed a very important observation that was not captured via analysis of Gwet's coefficient of patient-GP agreement. The data has shown that patients and GPs have mostly agreed with the statements related to appropriate justified expectations, whereas they both jointly disagreed with other statements related to expectations that lack clinical evidence, for example, radiological tests [Q11]. In other words, although the study revealed mismatched patient-GP expectations regarding ordering of tests or investigation (P_o= 42%), yet, most of those 42% who had matched expectations reported that they jointly disagreed about the likelihood of having an X-ray or other tests ordered during the consultation. The P_{neg} value is particularly useful in distinguishing between agreement on positive ratings and agreement on negative ratings; a value of 0.52 [Q11] suggests that more than half of the patients and GPs disagreed with the statement related to having investigations or tests on their list of expectations of the consultation, which, despite of the low patient-GP agreement, shows

that patients and GPs had appropriate expectations rather than unjustified inappropriate ones. This emphasises the potential role of the conceptual model in putting the current study findings in context with regard to the back pain consultation, and in highlighting the fact that matched patient-GP expectations must be backed up by evidence that these expectations are justified and appropriate, because for this state of matched patient-GP expectations to be favourable, it must be based on appropriate expectations.

Subsequently, the next part of the model described the issue of expectations communication and drew the attention to the fact that expectations are usually not communicated by patients to their GPs. This has been supported by the results of the current study, where patients and GPs were less likely to expect the patient to express their expectations during the encounter and were less likely to expect the GP to ask about unmet expectations at the end of the consultation. Given the importance of eliciting and identifying patients' expectations, the model suggested that expressed expectations (i.e., expectations that are spontaneously communicated by patients or triggered by the GP) are rare, and that expression of patients' expectations should be encouraged and supported in more effective ways in order to help GPs elicit, understand and meet patients' expectations as well as identify and address unmet ones.

A further area of disagreement, between patients' and GPs' expectations, was related to the value placed on the patients' perspective within the medical consultation. Aspects related to exploring patients' own beliefs and management ideas seemed to be highly undervalued, with the majority of participants underestimating such attributes. Moreover, in the current study, participants agreed that explanation and negotiation of mistaken beliefs, ideas and expectations were enough to render patients' considerably satisfied with the consultation. Participants reported that compromise and mid-point of agreement were plausible and acceptable options in order to address mismatched expectations. Using the concepts of 'met versus matched' and 'addressed versus unaddressed', the model emphasised and summarised these previous findings, by means of stressing the role of an active shared process of eliciting perceptions and expectations, two-way listening and interacting, explaining and informing, checking mutual understanding, reasoning, negotiating, educating and agreeing a care plan during the consultation (Vermeire et al., 2001; Carlsen and Norheim, 2005).

Supported by the data from the telephone interviews, the model then summarises the significance of considering patients' and GPs' expectations together, using a number of implications to highlight the potential importance of matched expectations in relation

to communication, adherence and satisfaction, as well as the overall experience. These implications were reinforced by the findings of the present study, where the analysis of patients' and GPs' interviews revealed several themes that corresponded to and confirmed those suggested by the Met-Matched model. This acted as a ratifying measure to confirm and reinforce the initially suggested premise regarding the importance of matched expectations for a successful back pain consultation in primary care.

6.5 Limitations of the study
6.5.1 Quantitative study

1. Participation and sample size

This study was limited by its small sample size, which might have affected the representativeness of the general back pain patient population and could comprise the generalisability of the findings. As recommended in the literature, if the researcher was forced to use an inadequate sample size, due to any constraints, such as budget, time, difficulties with recruitment or any other limitations, then a discussion of the appropriate sample size along with the sample size actually used in the study and the reasons for using inadequate sample size should be reported in the discussion chapter (Bartlett et al., 2001). The following section reports on these issues.

Ideally, the research sample should be of appropriate size in order to act as a good representation of the population without being too large that it might be a waste of time, effort and resources (Al-Subaihi, 2003). Sample size calculation might be influenced by the research design, study objectives and the intended statistical approach; inferential research designs are fairly different from descriptive designs in terms of the study precision and the minimum expected difference to be detected. Using specific software (Raosoft sample size calculator), the current study sample size was calculated at 221 patients and 25 GPs (review pages 92-93). Despite implementing various facilitators to enhance recruitment and participation, the current research study was not able to achieve the theoretical calculated sample size; instead, only 57 patients and 11 GPs effectively participated in the study.

Challenges of involving GPs in research are well acknowledged in the literature (Peto et al., 1993; Kaner et al., 1998; Prescott, 1999; Chew-Graham et al., 2007; van der Wouden et al., 2007; Treweek et al., 2010). Two decades ago, a survey of GPs' interest in general practice research obtained responses from 35% only of all surveyed GPs,

with only one third of them indicating they would have considerable interest in research (Silagy and Carson, 1989). Unfortunately, the case is not too much different at the present time; according to a recent study, only 15% of all surveyed GPs reported being involved in research activities at the time of the study (Glynn et al., 2009).

A considerable amount of primary care research depends on GPs to recruit patients into the study (Peto et al., 1993); previous research, however, has reported that lower recruitment rate might be linked to when GPs were the first to inform patients about the study, than when it was done via mailed letter (van der Wouden et al., 2007). In the current study, GPs were the principal means for initial recruitment of patients. The study, however, managed to overcome the potential threat of lower recruitment rates due to GPs recruiting for the study by means of asking GPs to give all eligible back pain patients a package containing information about the study and the EQ to be read and completed later if they decided to participate. For convenience, patients' packages were organised in a way that all the required material is provided in a single handy pack - one for each potential patient - that can be kept conveniently close and at easy reach in the consulting room (Peto et al., 1993).

In calculating the feasibility of recruiting a sufficient number of patients to the study, a variety of sources were used. Based on data from a national survey (McCormick et al., 1995), non-specific back pain was estimated to account for 4% of the overall reason for medical encounter, and thus an average of 77 back pain patients per GP per year (based on an average of 1917 consulting adult population per GP per year). Given the eight months recruitment period planned for the current study, an average back pain consultation rate was expected to be in the region of 51 patients per GP for the specified period (September to April). Each GP was required to recruit up to ten patients, which represents just about a fifth of the total expected number of patients consulting for their back pain. Even though this target number seemed feasible and doable, the majority of participating GPs did not manage to successfully recruit ten patients for the study; average recruitment rate was 5.2 recruited patients per GP.

Among the reasons for the inability of GPs to recruit the required participants for a research project, the literature reports a wide array including forgetfulness, being single handed, time pressure, heavy workload, concerns over loss of professional autonomy, the need to fill in lengthy paperwork, difficulty with consent procedures, uncertainty about the inclusion criteria, lack of eligible patients during the study period, concerns about confidentiality of collected data, researching sensitive topics, concerns

about the impact on the patient-GP relationship, insufficiently interesting question, involvement in too many research projects, lack of interest in research and lack of reward and recognition (Peto et al., 1993; Kaner et al., 1998; Prescott, 1999; Chew-Graham et al., 2007). Others reported that the most important factors influencing GPs' decision to participate in research were an interest in the topic, the burden for patients and GPs, good communication with the research team, provision of sufficient information before the study as well as a report of the final study results at the end of the project (Kocken et al., 1993). Similarly, it was suggested that lack of perceived relevance, lack of information and feedback on the study, and the increasing number of questionnaire surveys sent to GPs were main barriers for their participation in research (McAvoy and Kaner, 1996). In this study, the low recruitment rates achieved by GPs might be attributed to several reasons. Forgetfulness is thought to be one main reason. Caseload and time constraints are believed to be other principal contributing factors. Uncertainty about the inclusion criteria was also reported by few GPs.

Several approaches were suggested in the literature to promote recruitment. Chew-Graham et al. (2007) suggest that recruitment is likely to be more successful if enough information about the study is given, enough time for recruitment is planned, recruitment protocol and paperwork are simplified, as well as if the study would offer GPs support in the management of challenging conditions or would offer relevant service to an under-served patient group. Moreover, choosing an appealing topic with considerable clinical significance and making personal communication with GPs via providing continuous feedback are other suggested influencing factors (Prescott, 1999).

It was suggested that one way of enhancing participation is involving GPs with specific interest in the topic (Chew-Graham et al., 2007). Even though it might be argued that this sample would not then be a sound representation of the general GP population, there is no strong evidence to suggest that there would be a significant impact of special interest on the research study rigour. Supporting this, a recent study showed that GPs' special interest in back pain was actually inversely associated with better clinical management skills and understanding of the condition, where general practitioners' special interest or specialised medical training in back pain was associated with back pain management beliefs contrary to the best available evidence (Buchbinder et al., 2009). In the current study, although GPs' specialised or advanced training in back pain management seemed to significantly influence the extent of agreement with

their patients with regard to different aspects of the consultation, yet this improvement in the Agreement Coefficient (AC_1) was only by 14%.

Expanding the eligibility criteria was generally recommended for higher recruitment rates and better representativeness (Prescott, 1999; Chew-Graham et al., 2007). Using an opt-out rather than opt-in approach for contacting potential participants was another suggested way of triggering barriers to effective recruitment (Treweek et al., 2010). Finally, undertaking a pilot study to investigate the feasibility of the recruitment strategy is one way of identifying potential issues with participation and recruitment for research studies (Prescott, 1999). All of these were employed in the current study.

Based on a brief review of relevant literature about GPs' participation in research, several barriers to effective recruitment were identified and several facilitators were implemented to enhance recruitment in the current study. Time constraints, staff shortage and heavy workload were among the most common reported reasons for GPs not taking part in the current research study, either for recruiting patients or completing the EQ. Given that GPs have considerably increasing demands on their time, careful consideration was taken when designing the current study to try and minimise the required work by GPs to the least possible. For achieving this, the following have been implemented.

The recruitment protocol and the paperwork were simplified and reduced to the least required. GPs' recruiting role has been restricted to providing eligible patients with the study packages without the need to explain the study purpose, fill in lengthy forms or go through informed consent procedures. If the patient decided to participate, then they would send the completed questionnaire on their own time, which would carry their implicit consent for participation and thus saving GPs' time and effort. Moreover, GPs' duties in the current research study were broken down into easy short consecutive roles so that they did not feel overloaded or too occupied by participating in the study; for example, such steps included reading about the project and deciding whether they would like to participate, giving eligible patients the study packs until up to 10 patients are recruited, completing and returning the GPs' EQ, and finally, taking part in the telephone interviews. In addition, advice was sought from GPs participating in the LIMBIC project in order to design clear and simple material for the study; accordingly, it was possible to design a simple yet detailed information sheet about the study and a simple, clear and short questionnaire that would take less than ten minutes to complete.

Using single questions rather than multiple-segment ones, the questionnaire was designed to be self administered, with a very attractive layout featuring a relevant cartoon on the back page and a clear message of the potential importance of matched expectations on the front (Appendix 5).

Furthermore, in spite of the consistent emphasis on the voluntary nature of participation throughout the study, a number of strategies were used to promote participation and enhance chances of getting GPs interested. Initially, each potential GP was sent a detailed information sheet about the study, what their role would be, a sample questionnaire, pre-paid envelope and a slip with interested/not-interested boxes asking them to tick their preferences and return them in the provided envelope. Adopting a combined opt-in/opt-out technique ensured proper systematic follow-up of non-respondents, who were sent two consecutive reminders, with a 6-week interval in-between. Implementing this method improved response rate with an overall contribution to the total GPs' responses of 17% and 8% after the first and second reminders respectively, which expanded the recruitment boundaries and ensured the effect of mail loss and other similar factors can be ruled out.

Given that there was no payment to GPs for participating, every effort was made to ensure the study is attracting the interest and attention of a wide range of GPs. The topic of the current study is thought to be of considerable clinical importance and significant appeal to doctors and patients, particularly that most national policies and documents have been focusing on best ways to manage patients' expectations, experiences and satisfaction. Moreover, the specific condition, i.e., back pain, is deemed as a difficult and less-rewarding symptom for GPs to deal with in primary care; GPs would appreciate and be interested in engaging with studies like this current one that might offer GPs support in the management of this challenging condition or would offer suggestions for service improvement to a rather relatively less satisfied patient group. On a different account, it is possible that only GPs with special interest in back pain took part in the current study, however, as mentioned earlier, the possibility of a significant direct impact of GPs' special interest on the study findings might be neglected.

Among the common barriers identified in the current study was forgetfulness, which was identified by means of self-report during occasional follow-up telephone calls, where GPs were likely to mention that they have forgotten to give eligible patients the specified information packages. This was tackled by means of several approaches.

To remind GPs about the study, regular contact was maintained throughout the specified recruitment period with regular recruitment updates and reminders via email and mail progress reports. These would present a line chart, a bar graph plot and a table showing each of the participating GPs - anonymously - their total number of recruited versus target number of patients compared to other GPs in the project. Occasionally, other promotional reminders, e.g., mouse pads, writing pads and pens with the University logo, were sent in order to act as alternative recruitment prompts for GPs. Additional study packs were sent to GPs on a regular basis to ensure they had packs available at all times for eligible patients. Providing regular feedback on recruitment progress compared to other peers and reminding GPs of the study objectives and eligibility criteria helped to enhance recruitment rates.

Undertaking a pilot before the main study to investigate the feasibility of the recruitment strategy and data collection approach helped improve recruitment and identify potential issues that might interfere with participation. Expanding the eligibility criteria ensured enough patients can be included in the sample, which helped GPs achieve the target recruitment without compromising the representativeness of the sample to the general back pain population. In addition, instructions were given on the information sheet that individual GPs can participate in the study without the need for the total practice agreement.

Other reported reasons for non-participation included sensitivity of the topic of interest and concerns about the impact on the patient-GP relationship. These were addressed by providing sufficient information about the confidentiality and anonymity of the collected data and the justification for conducting the study as well as designing the questionnaire in such a way that it did not include any sensitive, difficult-to- answer, irritating or distressing questions. In this study, other reasons for GPs' non-participation included already involved in research, not interested in the topic, or involved in less than 20 hours per week direct patient care.

In the current study, one GP managed to recruit 10 patients, 3 recruited 8 patients, one recruited 6 patients, 2 recruited 5 patients, 3 recruited 2 patients and one GP recruited one patient. It was previously suggested that GPs who are routinely less research active tend to be older, less qualified and belong to practice that is not involved in training (Stocks and Gunnell, 2000). Statistical data analysis showed no significant difference between high recruiters ($\geq$ 6 recruited patients) and low recruiters ($\leq$ 5 recruited patients), in terms of age, sex, years in general practice, hours per week in

patient care or specialised training. The Mann-Whitney U test showed no statistically significant difference between all participating GPs, which may rule out any strong impact of individual GP's specific characteristics on the recruitment activity.

Recruitment activity was not consistent across the whole of the recruitment period, with the recruitment rate rising, dropping and even ceasing at different months of the specified period (review figure 14: page 114). Individual GPs began recruiting at different points in time, with some of them becoming active recruiters only after the regular recruitments updates and reminders were sent. Recruitment rate has been the highest as the specified recruitment period was approaching its end (March and April; 27% and 18% of total recruited patients respectively), possibly due to the regular reminders, updates and contacts with recruiting GPs. Conversely, there has been no recruitment activity over the month of December, probably due to seasonal holidays and vacations, which interfered with the recruitment activity. For the other months, they had an average recruitment rate of 11%.

Possible factors that might have affected recruitment for the current study might include the study timing, the length of the planned recruitment period and the specific clinical condition or research topic of interest. First, recruitment was carried out from September 2009 to April 2010, and was intervened by two seasonal holidays and vacation periods (Christmas and Easter), which might have had a significant impact on recruitment. Moreover, generally speaking, 2009/2010 have witnessed the credit crunch and the international economic crisis, which casted shadows on the national budget, and more specifically, on medical costs, health care budget and expenditure, which made it more difficult for GPs to get involved in as much research as they might want due to financial constraints and increasing workload, as they are been asked to reduce expenses, while still providing the same quality health care. This might have caused few GPs to be reluctant to get engaged in research projects. It was therefore a bad choice of recruitment period in terms of month and year, especially that the specified recruitment period is relatively short (8 months). The eleven active recruiting GPs were not able to successfully recruit the ten patients required for the study, although calculations made based on the National Morbidity Survey suggests that it should have been possible to achieve the target number of participants if they have just recruited one fifth of the consulting back pain population, i.e., 1.25 patient per month per GP.

Secondly, the length of the planned recruitment period might have affected recruitment and participation. The study specified a relatively short period for

recruitment, which was even shorter when holidays were included. This might have not allowed GPs to concentrate their recruiting efforts in order to reach their potential target. In the current study, perhaps longer recruitment period might have resulted in better participation rate as recruitment activity, although very slow, was still happening.

Finally, the specific research topic may have contributed to the difficulties with recruitment. Back pain specific expectations, is rather a sensitive topic for patients and GPs. Given the current amount of patients' and GPs 'dissatisfaction about back pain management in primary care as well as GPs' frustration with lack of optimal management guidelines, many patients and GPs might be reluctant to voice their expectations and perceptions about back pain consultations.

In spite of the several challenges and barriers for effective recruitment, the current research study managed to implement a number of strategies to improve recruitment and participation rate as outlined in the previous section and was relatively successful in maintaining a considerable amount of rigour and consistency while preserving the confidentiality and anonymity of the research participants.

2. Selection of research participants

There is a possibility of selection bias if selection of participants by GPs was based on aspects of satisfaction and concordance. Although it was clearly mentioned on the information sheet that GPs should be giving the questionnaire to all consecutive eligible patients attending consultation for their back pain, few GPs mentioned giving the questionnaires to patients that they perceived as reliable and responsible. Thus, it is not possible to rule out the fact that GPs might have given the questionnaires to the most compliant and satisfied patients rather than those difficult-to-manage ones. This may have led to an overestimation of agreement.

Selection of subjects and administration of the questionnaire by the researcher would control for this bias, but it was not possible to achieve this recruitment approach in the current study design. Moreover, selection bias might be due to GPs self-selecting for the study; yet it can be argued that the participating GPs are a good representation of the general GP population as there was no statistically significant difference between participating GPs (particularly between high recruiters and low recruiters), in terms of age, sex, years in general practice and special interest or advanced training in back pain management. Therefore, the current study assumed that GPs' special interest in back pain would not have a significant impact on their expectations of the consultation.

3. Measurement approach

GPs' expectations of a consultation are likely to vary according to the patient and from one consultation to the other, and thus - having GPs filling in a single questionnaire - the current study might be producing a range of "average" answers that might not be an accurate representation of the range of GPs' expectations. To minimise measurement error due to GPs completing a single questionnaire, GPs' were asked to complete the questionnaire putting in mind their opinions and perceptions in general and not in relation to a specific patient or consultation. A more appropriate design for future studies would be to measure GPs' expectations in relation to a specific patient and consultation to control for average responses and measurement error.

Like most studies dealing with the patient-GP relationship, this study was a cross sectional approach, aiming to explore the matching of patients' and GPs' expectations at a specific point of time rather than following it over a period of time or over several consultations. However, expectations are complex and could be best viewed as a moving target that presumably can change between consultations and become more congruent as the patient-GP relationship becomes more established. Moreover, the number of consultations can be a confounding factor for the study results; expectations of a second consultation might be influenced by the actual occurrences of previous ones, particularly as the GP and patient get to understand each other more and the patient gets to understand their condition. Future studies might implement more rigorous design by controlling for the number of consultations and time of administration (pre/post-visit), or by implementing a longitudinal design that would allow the exploration of the range of expectations over a period of time and number of consultations. Moreover, the current study assumed that satisfaction or dissatisfaction with the specific visit, during which the patient was given the questionnaire, would not affect the patients' accountancy of their expectations, as patients were clearly instructed to complete the questionnaire with regard to a general back pain consultation in primary care and not to the specific visit.

Recall bias was not anticipated to have been a problem, since patients were given the questionnaire on the same occasion of interest. Even though confidentiality of the responses was strongly stressed on several occasions (e.g., on the information sheet, on the invitation letter and before conducting the telephone interviews), there is a possibility of social desirability bias, which would mask the true proportion of those in disagreement with their GP. However, evidence suggested that when questionnaires

were completed in the anonymity of the participants' own homes than being administered on site (at the service location), respondents were more likely to report their unfavourable perceptions, particularly when rating individuals on whom they rely for care (Crow et al., 2002). It is believed that, in the current study, the effect of giving socially acceptable responses was reduced to the least possible by adopting an impersonal survey method, where patients were given the questionnaires and were asked to take them home, where they can complete them at their own convenience and with less concerns about anonymity and confidentiality of the supplied information.

Another limitation in the current study was that it did not investigate the convergent and divergent validity of the newly designed measurement tool. According to Collins et al. (2006), convergent validity assesses the extent to which the scores from the instrument of interest are correlated with scores from other instruments that measure the same construct, while divergent validity assesses the extent to which the scores from the instrument of interest are not correlated with measures of constructs antithetical to the construct of interest. Further research is needed to establish these aspects of validity of the measurement tool.

Future studies should control for some of the major sources of heterogeneity and other confounding factors that might have influenced the range of elicited expectations in the current study, i.e., disease chronicity, socioeconomic class, personal factors, previous experience with the health care system, previous consultations for same symptom, and general perception of improvement. Symptom chronicity is thought to a strong influencing factor on the formation of expectations; the duration of pain is suggested to influence the mindset of the patients and the formation of their expectations, as after years of chronic pain it is not unlikely that a pessimistic attitude has developed, particularly if they have had several unsuccessful treatment strategies (Gulbrandsen et al., 2010). The current study did not distinguish between patients' expectations in terms of the duration of back pain, which might have led to a less homogenous group and might have affected the range of elicited expectations. Likewise, socioeconomic class, cultural norms and other personal factors might influence expectations (Crow et al., 2002); the study, however, failed to take into account these factors due to difficulties in recruitment and having the GPs as an intermediate recruiter. Previous experience with health systems and general perception of improvement are also influencing factors that should have been controlled for.

Future studies might consider looking at the matching of expectations in relation to important clinical outcomes, i.e., pain severity, functional level and return-to-work, in order to establish the importance of this agreement and assess its potential impact on the consultation using objective outcome measures. Addressing these aspects was beyond the scope of this research project. The current study would be viewed as setting the stage for future research focusing on further exploration of this premise of the importance of the state of matched patient-GP expectations in terms of various important patient and clinical outcomes.

4. Low Kappa and high agreement

In order to investigate the matching of patients' and GPs' expectations, all questionnaires were coded for pair-wise analysis with the five-point scale dichotomised as 'agree' or 'disagree'. Several agreement coefficients were calculated to investigate the matching of patient-GP expectations, including Kappa coefficient of agreement (K), Gwet's agreement coefficient (AC_1), proportion of overall agreement (P_o), and indexes of proportional agreement (P_{pos} and P_{neg}). While Kappa coefficient is regarded as one of the most widely-used methods for measuring agreement (Gwet, 2008 & 2010), recent studies have identified several drawbacks and raised few concerns over its use (Ahlen et al., 2007; Gwet, 2008 & 2010); indeed, the results of the current study showed that Kappa coefficient was not very useful for investigating the level of patient-GP agreement, where it showed low figures for data with significantly high agreement (Table 16: page 122).

Prerequisites for high kappa are good agreement and a relatively normal distribution between positive and negative responses (Ahlen et al., 2007); therefore, a concentration of responses in one direction would jeopardise the Kappa coefficient values and would invalidate its use. Furthermore, a high concentration of data that lies around the boundary separating two categories of responses, for example, 'strongly agree' and 'agree', might make it difficult to measure agreement using Kappa coefficient (Gwet, 2010). It was suggested that Kappa coefficient would be expected to be consistently low in studies comparing patients' and GPs' attitudes and perceptions towards the consultation as participants tend to be very positive when answering closed-ended questions on an ordinal scale (Ahlen et al., 2007), which was the exact situation in this study.

Moreover, when the measurement is ordinal, as with the current EQ, agreement and disagreement are no longer two distinctive notions (Gwet, 2010), i.e., while the statistical approach might consider two subjects with two different responses, for example, 'strongly agree' and 'agree', as disagreeing, however, in fact, they are in agreement but with different level of agreement, and thus, their disagreement can be seen as a different degree of agreement (Gwet, 2010). In all these previous situations, the agreement coefficients would produce unexpected results and would be limited in identifying an objective degree of agreement, as it tends to underestimate the agreement. An alternative and more stable agreement coefficient referred to as AC_1 was proposed in the literature to address these limitations (Gwet, 2008), particularly situations where there is very high agreement between the two raters. This is because, unlike the Kappa coefficient, the AC_1 statistic was developed in such a way that estimation of chance agreement (which is also measured in Kappa coefficient) is proportional to the percentage of responses where agreement might be attributed to chance, reducing the overall agreement by chance to the right magnitude (Gwet, 2008). As is the case with most of the current EQ items, a high concentration of observation in one table cell should reduce the magnitude of chance-agreement probability, leading to a higher agreement (Gwet, 2002a & 2002b). Kappa coefficient fails to acknowledge this relationship and it seems that AC_1 statistic is more able to implement it in a way to yield a true measure of agreement; therefore, AC_1 was used to measure patient-GP agreement in the current study. This explains why Kappa coefficient figures were very low, while there was significant patient-GP agreement.

6.5.2 Qualitative study

Conducting the telephone interviews with patients was far more challenging than that with the GPs. Patients took the opportunity to unpack their concerns and worries, and to tell their stories about their journeys with the pain and the health care system, as well as their personal reflections and perceptions with regard to previous episodes of care and the impact of pain on their lives. Although the opportunity was given for patients to talk freely, lots of probes were required to bring the patients back on track to discuss the original topics of interest and to address the issues posed by the interview questions.

Conversely, GPs were more clear and explicit in their views and responses, which were characterised by a considerable degree of openness, honesty and relevance that helped to address the posed interview questions in more depth. A possible

explanation of this observation might be implied from the general views and perceptions with regard to the current back pain management in primary care, where patients feel quite unsatisfied with the care given, and GPs feel frustrated and pretty much hopeless in helping their patients with their back pain. This observation is consistent with the findings of a recent study that investigated the shared experiences of back pain patients and their GPs (Allegretti et al., 2010), which stated that patients' stories focused mainly on their suffering from severe and disabling back pain, while GPs emphasised the many challenges in treating this patient population. This presented a relatively significant challenge while conducting the telephone interviews.

The qualitative data collection and analysis might have been affected by the limited timeframe allocated for this part of the study. The researcher, however, applied a considerably tight analysis approach to the collected data from the semi-structured telephone interviews, which was considered appropriate for smaller qualitative studies, as it can provide clarity and focus, and would prevent data and information overload (Miles and Huberman, 1994).

One of the disadvantages of telephone interviews that might have limited the richness of the collected data (due to loss of contextual and nonverbal data) is the lack of visual cues (Carr and Worth, 2001; Novick, 2008). Telephone interviews can, however, allow participants to feel relaxed and able to disclose sensitive information, and evidence is lacking that they produce lower quality data (Novick, 2008). Evidence suggested that the collected data from telephone interviews and face-to-face interviews did not significantly differ in terms of quality (Aneshensel et al., 1982; Carr and Worth, 2001; Cook et al., 2003); therefore, the effect of losing such asset of visual cues on the study findings could be considered to be negligible.

An inevitable limitation that could not be avoided or controlled for was the level of patients' satisfaction or dissatisfaction with a recent care episode. Recent positive or negative experience with the health care system, particularly in relation to the medical consultation is believed to might have influenced the participants' perceptions of the importance and impact of having matched expectations with their GP, merely because their expectations would have been altered, improved or adversely affected by this recent encounter. Much like satisfaction, motivation, pain severity and other psychosocial issues, such as anxiety or depression might have affected the participants' responses. Analysis of the collected data, however, did not support such concerns, as there were no significant discrepancies between participating patients' and GPs'

perceptions or opinions. This suggests that any significant influence of this set of confounding factors, such as satisfaction, motivation, pain or depression, can be disregarded, in the context of this study and in relation to this specific sample.

Finally, although the quantitative data collection part (and consequently, the qualitative part, as it used a nested subsample) drew patients and GPs from a wide range of general practices in the specified Health Authority, non-probability sampling limits the external generalisability of the findings to other contexts and other settings. Qualitative samples, however, tend to be purposive, rather than random (Miles and Huberman, 1994). The study was also limited by its small scale interview guide and the short telephone interviews, but this was intentional. A QUAN-qual design was adopted for this study, as the qualitative data collection part was meant to be complementary and explanatory for the quantitative part. The brief interview guide is believed to have served the purpose of its construction to a considerable degree, as it has collected relevant and high quality data that helped to answer the research questions adequately.

6.6 Implications

According to the reviewed literature, the current study is the first to investigate the matching of back pain patients' and their GPs' expectations of the consultation using validated measurement tool. The EQ was developed, piloted and tested, and was deemed as a valid and reliable tool for measuring the matching of patient-GP back pain-specific expectations. The implications and clinical relevance of the study findings can be related to three distinctive areas, i.e., current practice, research and education.

6.6.1 Current practice

The newly designed EQ can be used in different ways in relation to current back pain management in general practice, for example, as an audit, quality monitoring or service improvement tool. One of the potential applications of the EQ is to be used as a quality assurance and monitoring tool. The questionnaire can be administered pre-visit to explore the range of patients' expectations of the consultation, and then re-administered post-visit, after some adaptations, to monitor how well the GP was in responding and addressing the patients' expectations. It is worth noting that, unlike other similar measurement tools, the questionnaire would not be used to identify the patient's needs and expectations in order for the GP to meet them, but rather would be used to evaluate the GP's ability to negotiate and adjust unrealistic, inappropriate or unjustified

patients' expectations, and to identify how well these could be addressed in a way that would enhance satisfaction and positive patients' experience.

For example, if the patient has reported on the pre-visit questionnaire that he/she would expect the GP to order some radiographic investigations; the tool would help the GP to identify this unjustified patient's expectation in order to respond to it by means of other strategies, e.g., explanation or education, which could help adjust this expectation without the need for the GP to follow unjustified clinical practice (e.g., ordering unnecessary investigations). In other words, despite not having an X-ray, the patient would not report it as unmet expectation post-visit, even though they had it originally as a pre-visit expectation, which can be attributed to the GP's ability to offer alternatives that were appropriate, persuasive and satisfactory for the patient not to perceive that their expectation was not met. The role of the questionnaire could be to evaluate the GPs' negotiation strategies and identify unrealistic patients' expectations to ensure they are addressed during the consultation, in such a way to enhance the quality of the health care and minimise the impact of unmet expectations on concordance and adherence.

Most importantly, the tool can be used to objectively monitor and assess the matching of patient-GP expectations over a period of time rather than in relation to a specific or single visit. As suggested by the findings of the current study, continuity of care has been highly valued by patients, and there is a need to provide back pain care that is based on continuity of high quality health care. The Met-Matched conceptual model and the EQ could form a potentially useful toolbox for objective assessment of the occurrences within the consultation, in terms of eliciting, negotiating, optimising and matching of patient-GP expectations, and the consequences of such a matching, i.e., the impact on communication, adherence, satisfaction, and most importantly, future expectations in the following consultations. This could potentially enable GPs to effectively and adequately respond to the dynamic medical encounter situation and to each patient's individualised needs. The EQ might be used as an objective indicator to assess the ability of the GP to elicit and address patients' expectations and to guide the consultation in the direction of a midpoint of agreement or a safe shore of matched patient-GP expectations. In other words, the EQ can be used with the Met-Matched model to form an "Agree-ometer" that can measure patient-GP agreement regarding different aspects of the consultation and the health care over time. Further research is needed, however, to test the underlying theoretical grounds and practical relevance of the Met-Matched model, and the potential for its use in a clinical situation.

6.6.2 Research

The EQ was the first tool to be developed to measure the matching of back pain patients' and GPs' expectations of the consultation. The tool was developed to address the issues and gaps identified in the literature pertaining to measuring health care patients' and GPs' expectations, in terms of the definitional confusion, inconsistent measurement approaches, lack of validity and reliability indicators and lack of specificity of the measurement tools. The tool, however, needs further testing to establish its stability across different geographical areas. The tool also needs to be tested and compared before and after the consultation, to investigate the potential impact of the occurrences within the consultation on the range of expectations identified by the tool. Larger sample size is needed to test other psychometric and statistical properties of the EQ, for example, factor loading using principal component analysis or the credibility of the measurement tool.

There are several potential applications and implications of the EQ and the current study findings with respect to current research around patients' and GPs' expectations of the back pain consultation. As for GPs' expectations, do they vary from one consultation to the other and from one patient to another? Can they expand and contract according to the patient's characteristics, perceived pressure from patients, and time constraints? If expectations are specific to the unique individualised consultation, is there a way of enhancing these expectations, by means of standardisation and optimisation in order to minimise variation in clinical practice, which would, in itself, lead to patients' unmet expectations, as well as unmatched patient-GP expectations. It could be argued that having GPs filling in a single questionnaire as in the current study, regardless of the specific patient or consultation, might have compromised the results, as GPs' expectations are likely to vary according to the specific patient. The present study, however, stresses that GPs' clinical attitude and expectations of the consultation should not shift or vary according to different patients' characteristics or according to pressures posed by patients during the different consultation scenarios. This is because such an attitude might lead to variations in clinical practice and management strategies that can potentially affect the quality of care, as well as patient-GP relationship and satisfaction. Consistency in GPs' expectations of the back pain consultation could lead to a more standardised clinical approach and could potentially optimise the bio-psychosocial content of the clinical encounter (i.e., being warm and friendly, history taking, examination, information, education, ...etc). The current study provides an

opportunity for further studies to build on this initial work in order to answer these previous research questions. It also provides a validated measurement tool for the objective assessment of GPs' expectations in order to monitor the degree of variation in GPs' clinical practice and style, as well as factors that might induce this variation.

Just to challenge basic assumptions: Why is it important for GPs and patients to have matched expectations anyway? Are there situations where it might be better not to have congruent expectations? If it is good to have matched expectations, whose expectations should change? To be able to answer such an argument, one has to make precise critical appraisal of previous research. The impact of patient-clinician agreement is well supported and acknowledged in the literature with various studies looking at different outcome measures to identify the impact of such agreement, for example, symptom resolution, better general health outcome, higher satisfaction, better communication and greater adherence to treatment, with only very few studies reporting situations when the relationship was the other way around, i.e., disagreement led to better outcome (review pages 30-32). Although these are to some extent proxy measures of health outcomes, yet, they may act as strong moderators for improved important health outcomes, such as pain severity, disability, functional capacity and return-to-work; anything that improves the quality of the consultation therefore has the potential to improve all aspects of health care (Middleton et al., 2006).

It appears that there is consensus in the literature that agreement might have a potential impact on specific aspects of the health care service, but, how can this patient-GP agreement be achieved and who should change in case of disagreement? This is a two-fold answer: Firstly, as we discussed earlier, GPs' expectations should be optimised to reduce variation in clinical practice and should mainly be based on the best available clinical evidence and guidelines; secondly, GPs should acknowledge patients' expectations in a way to met rationale ones and address unjustified expectations with alternatives or education and thus help refine future patients' expectations. Achieving patient-GP agreement is not an easy straight forward task, yet, it is still doable. So, whose expectations should change? GPs' expectations could change if not based on best clinical evidence; alternatively, GPs might help patients change and refine their expectations from unjustified irrational ones to healthy appropriate ones that are related to evidence and guidelines. Moreover, the data from the patients' and GPs' telephone interviews reported in this study suggests that it is unlikely that patients' and GPs' expectations would consistently agree with regard to all aspects of the consultation;

patients and GPs, however, reported that they would both have to compromise their expectations and needs, in order to reach a mid-point that can ensure a mutual understanding and benefit of both of them have been achieved during the consultation.

The Met-Matched conceptual model proposed in this study might act as a guide for future studies interested in investigating the relationship between matched patient-GP expectations and important clinical outcome measures, such as pain severity, return to work, functional capacity and disability. Moreover, it would be a useful framework for comparative studies focusing on investigating different influencing factors affecting the patient-GP and the patient-other health care professionals (e.g., physiotherapist) relationship and the potential impact of their agreement on different outcome measures.

The conceptual model and the measurement tool (EQ) proposed in the current study might be used to identify and recognise predictors of patient-GP agreement in primary care as related to different aspects of the consultation. Identifying the variables associated with disagreement may help to improve communication and patient outcomes in primary care (Greer and Halgin, 2006), in such a way that would enhance the patient's overall experience with the consultation and promote maximum mutual gain for patients and GPs.

6.6.3 Education

Kerse et al. (2004) suggested that achieving patient-GP agreement and ensuring that the management plan is acceptable for both of them require excellent communication skills, which could be improved by educating GPs. Communication skills are an essential element in the medical education of doctors, and appear strongly in the F2 stage of the foundation program. Evidence suggested that educating GPs about identifying patients' agenda improved patients' perceptions of enhanced patient-GP relationship (Middleton et al., 2006). Vermeire et al. (2001) suggested that a number of GPs' skills can be enhanced by training to enable GPs to elicit patients' perceptions and expectations, learn methods of active listening and empathy, give clear explanations, check the patient's understanding and negotiate a treatment plan.

The EQ could have several clinical values with regard to these perspectives. For example, it could be potentially useful self-audit tool for use by general practitioners and trainee GPs in general practice (Williams et al., 1995), for monitoring of performance and identifying training needs. The GPs' part of the EQ could be used for educational purposes on all training levels of the consultation skills (Ahlen et al., 2007).

The EQ can be used by GPs in general practice as a tool for reflection on own performance, in terms of communication, interaction and negotiation in the context of back pain-specific expectations, and can also be used in learning or teaching settings, for example, with colleagues or medical students (Lærum et al., 2006). As suggested by Ahlen et al. (2007), tools that measure the GPs' perspective, such as the present EQ, can be used as a mental checklist for GPs in daily practice, where GPs can select all or a few items that they could regularly assess after some consecutive consultations. It can also be used for improving clinical management strategies and influencing policies and guidelines.

Chapter VII
Summary and Conclusion

7.1 Summary

This research journey started by an ambitious question that was concerned with ways to improve back pain management in the community. The vehicle of enquiry had several different stations throughout the journey, including patients' satisfaction with the care, the range of patients' back pain-specific expectations, GPs' attitudes, beliefs and expectations of the consultation, which all led to the identification of the research questions posed for the current study. Working within the inter-professional LIMBIC steering group, and attending the eight LIMBIC workshops with patients and GPs to learn together how to improve back pain management in the community, helped to structure and shape these research questions, and to consolidate the justification and the need for a study to investigate the role of matched patient-GP expectations on the back pain consultation process and outcome.

The study started by designing and conducting an integrative literature review where the relevant body of literature pertaining to patients' and GPs' expectations of the consultation was critically analysed and synthesised in order to identify gaps in the literature and suggest new perspectives on the subject, which was the issue of 'matched' rather than 'met' patients' and GPs' expectations, and its potential importance for a successful back pain consultation. The ILR identified several gaps and drawbacks in previous literature and suggested a few recommendations for future research. Based on the findings from the ILR and discussions with the LIMBIC patients' and GPs, the current study was designed to address the identified gaps, in terms of the definitional confusion, the inconsistency of previous measurement approaches, the lack of valid measurement tools and the lack of previous studies investigating the matching of patient-GP expectations with regard to the back pain consultation. Using a mixed methods approach, the present study was designed and conducted with three main aims, namely, to develop a valid measurement tool of the matching of patient-GP expectations; to use this tool to investigate how matched are these expectations; and to explore patients' and GPs' perceptions regarding the importance of such a state of matched expectations for the back pain consultation. Based on the ILR, the 'Met-Matched' conceptual model was designed to structure these research questions and to present the underlying logic of the premise of matched versus met expectations.

Within the limitations reported in this study, the findings suggest that the newly designed Expectations Questionnaire seemed to be a valid, appropriate and acceptable tool to be used for measuring the matching of back pain patients' and GPs expectations of the consultation. The study has established the face, content, construct and concurrent validity, as well as internal consistency and test-retest reliability of the new tool. It is hoped that such a tool can be used in different contexts and for various purposes. For example, it can be used in clinical practice, to monitor and improve the health care quality, patient-GP interaction and patients' satisfaction; in education, to improve GPs' communication, negotiation and consulting skills; and in research, for studies seeking to investigate and explore this new topic of matched expectations and its potential impact on different aspects of the consultation and the patient-GP relationship. Studies are needed, however, for further testing of the tool in different contexts, situations and research designs, for example, pre-/post-consultation designs, general versus visit-specific expectations or different patients' characteristics (e.g., acute and chronic back pain, different socioeconomic class ...etc).

Within the limitations of this study, the findings showed that patients and GPs expectations were in agreement regarding two thirds of the attributes of the back pain consultation. The study also showed several aspects of divergence between patient-GP expectations, mainly in relation to expectations communication, seeking the patients' perspectives during the consultation, as well as different expectations regarding referral and investigations. The findings from the telephone interviews, however, suggested that GPs' clinical attitude might be the key for addressing these mismatched expectations, as participants agreed that acknowledging, negotiating and addressing such unmatched expectations during the consultation, by offering alternatives or explanation for example, could render patients considerably satisfied with the consultation and significantly pleased with the consultation overall experience.

The interviews revealed that GPs were still split between the biomedical and psychosocial models, while patients were determined that a psychosocial approach would fit better with their needs. A bio-psychosocial approach is deemed to be the most suitable model, but barriers to its effective implementation were still reported. All participants agreed that a state of matched patient-GP expectations would guide the consultation in the direction of mutual understanding and recognition of the perspective of each of them, which would enhance communication, trust, empathy, adherence and satisfaction. Yet, all participants agreed that achieving such a state of matched

expectations is not an easy task, due to several barriers, such as different agendas, heavy caseload, time constraints and lack of continuity of care. Participants acknowledged, however, that a midpoint and compromise of expectations would be expected and accepted as a plausible method for achieving patient-GP agreement.

The study suggests that excuses reported by health care providers of the high pressure exerted by patients' expectations on the health care system have to cease in favour of active steps towards addressing unrealistic expectations by offering appropriate alternatives and fulfilling healthy justified ones, with the aim of achieving an optimal state of matched patient-GP expectations. If the patients' clear message is to stop trying to cure them and start listening to them, this message cannot be simply ignored just because GPs do not have time to listen to patients' stories or because of the heavy workload or limited resources. If back pain patients value interpersonal and psychosocial aspects of care more than clinical and technical interventions, then maybe it is the way forward. Shared decision-making, efficient communication, empathy, trust and empowerment have now become important features of the back pain consultation, and could possibly be achieved through enhancing the mutual understanding and agreement of patients and GPs during the consultation. While there are several attributes of the patient-GP relationship that can affect the consultation process and outcome, it is believed that a state of matched patient-GP expectations could be one of the principal determinants of the quality of the health care.

While the findings are thought to add considerable contribution to the body of knowledge, mainly in terms of the new tool, and the new perspectives on the role of matched patient-GP expectations with regard to the back pain consultation, as well as patients' and GPs' perceptions regarding the importance of such matching, the main strength of this study, however, is that it approached the subject from multiple directions and using mixed methods, which could facilitate a wide range of future research aiming to investigate this fruitful topic of matched patient-GP expectations, using pure quantitative, qualitative, or mixed methods designs.

7.2 Conclusion

The current study presented a new tool that might potentially be used for different purposes related to practice, research and education. The EQ is the first valid, feasible and acceptable measurement tool that was designed for measuring the matching of back pain patients' and GPs' specific expectations of the consultation. Investigating

the matching of patients' and GPs' expectations revealed several convergences, but also identified a significant mismatch and disagreement. Patients and GPs agreed about most biomedical and technical aspects of the consultation, but the psychosocial aspect of the management approach seemed to continue to be problematic. This was affirmed by the qualitative data, where patients emphasised their preference for a psychosocially-dominated management approach, while GPs were still split between their preferences of a biomedical-based management approach and their conviction of the adequacy and comprehensiveness of a bio-psychosocial model. Nevertheless, all patients and GPs perceived a state of matched expectations as potentially significant for a more successful back pain consultation, in terms of enhanced communication, empathy, trust, adherence, and satisfaction.

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Appendices

Learning to Improve the Management of Back Pain in the Community (LIMBIC)

A summary report July 2010

The background to this research

GPs struggle with managing back pain, they seem stuck in the medical model, ignoring best evidence and psycho-social aspects and referring inappropriately leading to huge financial cost and impact on delays in treatment, chronicity and disability.

What we did in the LIMBIC project

We held eight workshops with Practices, sharing evidence about back pain and improvement knowledge. In these workshops, the Practice teams exchanged ideas, used evidence to inform their improvement plans, introduced and tested changes using Plan-Do-Study-Act (PDSA) cycles, and were supported on site by an improvement facilitator. Each Practice team included a patient from their Practice. These patient representatives helped tailor the changes to the needs of patients. The Practice teams kept their colleagues informed at team meetings and posted progress on a wiki (a web-based communication tool).

Improvement tools

We used improvement tools such as patient stories, process mapping, PDSA (Plan-Do-Study-Act) cycles to identify improvement ideas which led to a range of needs emerging which included better patient information.

How we measured improvement.

Patient outcomes were measured before and after the workshops using a matched cohort design which involved patients who presented to their GP with back pain completing a questionnaire about their condition and the treatment they received.

For the changes made by the Practice teams, they identified measures prior to implementing the PDSA cycles.

There was also standardised practice level outcome data used to measure the use of services and cost of those services. This data was acquired from practice computer systems after they installed a bespoke template for use with people who presented with back pain.

Appendix 1. Summary of the LIMBIC project.

What difference did this all make?

Changes that occurred in everyday practice included;
- a radical shift in understanding the value of engaging with patients,
- GPs changed the way they consulted emphasising more on 'self-management' and less on intervention,
- improvements around patient information processes, referral to physiotherapy, reduction in waiting times,
- attitudinal shifts where teams recognised the value of user involvement, the benefits of shared working and interprofessional learning,
- better understanding of improvement thinking and its application.

The patient outcomes studies showed that people who had leg pain, felt downhearted, had poor self-rated health and had had their back pain for longer did not recover as well as those who did not have these features. When they were controlled for in our statistical analysis however, people who consulted for back pain after the interprofessional learning did a little better, especially women.

We also found that GPs referred to a narrower spread of services after the learning phase of the project, but this did not affect the costs of care.

X-rays and MRI's were used only sparingly before and after the workshops.

Lessons learnt from LIMBIC

- Small changes can make a big difference for patients and health care teams.
- Achievement of improvements can be stimulated and made possible by patient involvement, Practice based support, interprofessional learning, making the effort to find the time, coupling clinical knowledge and evidence with improvement knowledge
- Collecting outcomes data from primary care Practices requires additional effort

The key messages

- Placing patients as service users at the heart of interprofessional learning is powerful in shifting attitudes
- By coupling clinical knowledge with improvement knowledge it is possible to improve their sense of competence and confidence for professionals.

Principal Investigators:
Professor Eloise Carr, Dr Charles Campion-Smith,

The LIMBIC Project Steering Group:

Professor Alan Breen	Professor Peter Wilcock	
Carol Clark	Carole Cooper	Dr Nigel Cowley
Dr David Crichton	Maddy Ferrari	Dr Paul French
Ehab Georgy	Dawn Griffiths	Dr Dries Hettinga
Dawn Jackson	Jennifer Langworthy	Michelle O'Brien
Rob Payne	Dr Charles Sears	Professor Gail Thomas,
Patricia Watber	Charles Woollin	Louise Worswick

For further information see www.limbic.org.uk

Appendix 1. Summary of the LIMBIC project.

Appendix 2: Search strategy for the Integrative Literature Review

An integrative literature review was designed and conducted to investigate back pain patients' and GPs' expectations of the back pain consultation in general practice. In order to fully explore the topic of back pain-specific expectations in a comprehensive way, a broad range of study designs including qualitative and quantitative empirical research, were included in the review. As shown in the Quorum flow chart below, different keywords, including: physician, GP, doctor, patient, expectation, desire, preference, request, agreement, concordance, primary care, general practice, and back pain, were used in different combinations, using Boolean and Truncation searching strategies, to search MEDLINE, PSYCHINFO, AMED, Science Citation Index, CINAHL, and COCHRANE databases (in title, abstract or within the full text). All relevant papers, published in English from the start of each database until January 2010, were identified.

The search strategy retrieved 37 relevant citations. Further manual examination of the reference list of the studies and literature reviews retrieved another sixteen papers, making it a total of 53 titles and abstracts. These were the studies focusing on patients' and GPs' expectations, desires, or requests in general. Subsequently, the studies were reviewed and delimited to those related to back pain-specific expectations. Thirteen potentially relevant studies were identified; those were conducted in a primary care setting, focused on back pain, and elicited patients and/or GPs' pre or post-visit expectations. A last paper was identified through further review of reference lists of relevant studies, making a total of 14 papers.

Further review of the literature was done by searching the fields of marketing and psychology to gain more insight and understanding of the construct of expectations. Most of the literature related to understanding expectations is drawn from a range of diverse sources from the health care, marketing, psychology, sociology, management, and social policy disciplines. Few studies within these disciplines proved to be useful for the topic of interest; however, most of them approached the understanding of expectations from a different perspective other than that intended for the purpose of this review. The aim of the review was to have a more-focused understanding of expectations from a biomedical health care point of view rather than an overall, more generalised, understanding of the global construct of expectations that is predominantly drawn from management and marketing literature. In order to thoroughly understand back pain-specific expectations, it was necessary to be more focused on a clinical biomedical approach when reviewing the relevant literature.

Appendix 2. Search strategy for the Integrative Literature Review (ILR).

MEDLINE, PSYCHINFO, AMED, Science Citation Index, CINAHL & COCHRANE databases search
- All qualitative and quantitative studies;
- Published in English;
- From the start of each database until January 2010

All papers for which the title included any of the following words (in any form):

Expectation, desire, preference, request, agreement, concordance, patient, doctor, physician, general practitioner, back pain, primary care, and general practice

Another search using a combination of the following terms:

Patient-doctor interaction, communication, agreement, or concordance

Combined the results of the 2 searches
Retrieval of 113 abstracts

Duplicates removed
(n = 21)

Abstracts were examined
(n=92)

Excluded citations that contained: *pregnancy, surgical procedures, specific conditions, nursing, letters, or editorials* **(n = 55)**

Manual examination of the reference lists
(n=37)

Additional **16** potentially relevant papers

Full papers were examined
(n=53)

Delimited to those investigating back pain-specific expectations
(39 excluded)

Relevant studies were identified and reviewed **(n=14)**. Those were:
- Conducted in primary care setting
- Focused on back pain
- Investigated patients and/or GPs' pre- or post-visit expectations

Studies were reviewed in detail to abstract information on:
(1) Study design, number of participants, geographical region and setting.
(2) Type of expectations (i.e., aspect of interest), content (i.e., is it measuring expectations from a process or outcome point of view), timing (i.e., pre-visit or post-visit), and method (e.g., interview or questionnaire).

Diagrammatic representation of the search strategy

Appendix 2. Search strategy for the Integrative Literature Review (ILR).

Patients' Agenda

Desires — wishes regarding medical care

Expectations — anticipation that given events are likely to occur during or as a result of service.

Requests — desires transmitted verbally to doctor

(Uhlmann et al., 1984 and Kravitz, 2001)

Patients' expectations

Priority
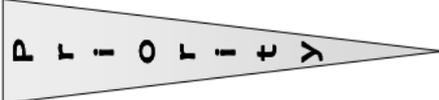
- information
- Fully examined by doctor
- prognosis
- GP showing interest and listening
- education and stress counselling
- referral
- explanation of the problem and accurate diagnosis
- Reassurance and advice
- prescription
- sharing problems and doubts
- being included in decision-making
- Diagnostic tests

Bournemouth University

Back Pain Patients' and Doctors' Expectations in Primary Care Settings

Prepared by:
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Expectations:
why complex??

- defined and conceptualised in various ways.
- expectations are influenced by:
  - perceived vulnerability to illness
  - past experiences
  - acquired knowledge

(Kravitz, 2001)

Appendix 3. Outline of the LIMBIC oral presentation.

Unmatched Expectations

(Kravitz et al., 1996)

subjective
experience of illness

Objective
Disease

Importance of meeting expectations

- Increase Satisfaction.
- Increase patient and doctor concordance.
- One measure of the quality of health care system.
- Better outcome of the visit for both patients and doctors.

Doctors' expectations

P r i o r i t y

- decrease unnecessary specialist referrals
- provide cost-effective service
- improve his own experience
- prescribing effective treatment
- achieving the practice goals
- patient education and stress counselling
- symptoms relief
- giving relevant Information
- reaching sound diagnosis

Patients' and GPs' beliefs
How accurate are they??

- ..... GPs are sympathetic, but they just can't do it.
- ..... haven't got the qualifications to give massage or manipulation.
- ..... "he can't provide cure, only referral or investigation".
- ..... "his main concern is symptom relief, never interested in identifying cause and source of pain, nor solving the main problem and identifying sound diagnosis".

- ..... symptoms are mostly due to stress rather than physical cause.
- ..... ask to see GP to get referral, tests or sick certificates.
- ..... they want access to more specialized back pain services, as they belief GP is unable to help.

(Breen et al., 2007; McIntosh and Shaw, 2003)

Appendix 3. Outline of the LIMBIC oral presentation.

RESEARCH INFORMATION SHEET

Back Pain Management in Primary Care:

Development of a Questionnaire for Doctors' and Patients' Expectations and the Significance of Matched Expectations

You are being invited to take part in a research project. Here is some information to help you decide whether or not to take part. Please take time to read the following information carefully. Please ask us if there is any unclear points or if you would like more information.

Introduction

Among patients presenting with back pain, expectations for care are common. Doctors as well seem to have their own expectations. Better service outcome is thought to be associated with higher doctor-patient agreement. Further understanding of patients and doctors' expectations could improve the health care service.

What is the purpose of this study?

The purpose of this part of the study is to explore patients and doctors' expectations related to back pain consultation, using a newly designed questionnaire, as well as to investigate how matched are the patients and doctors' expectations.

Why have I been chosen?

You have been requested to take part in this study because you have been involved in direct patient   care in general practice for at least 20 hours/week.

Do I have to take part?

Participation is completely voluntary. It is up to you to decide whether or not to take part. If you decide to take part, you are still free to withdraw at any time without giving a reason.

Will my taking part in the study be kept confidential?

All details will be kept completely confidential on a password protected computer. No-one else other than the research team will have access to your details. The study results will be presented in such a way that all individuals' details cannot be identified.

What will the study involve?

A 21-item questionnaire, related to back pain patients and doctors' expectations of consultation, was designed and will be given to patients and doctors to explore their expectations and to investigate the matching of patients and doctors' expectations.

What do I have to do?

If you choose to participate, you will be given packages, each containing a copy of the questionnaire, information sheet and prepaid envelope. You (or practice receptionist) will give eligible patients, attending consultation for their back pain, a package to take with them. If the patient wants to participate, they will complete and mail the questionnaire in the supplied prepaid envelope. Questionnaires were designed to be self-administered, brief, understandable and easy to complete. When we get responses from up to 10 patients, you will get a pack containing a copy of the questionnaire and a prepaid envelope. You will be asked to kindly complete and mail the questionnaire in the prepaid envelope. Estimated time needed to complete the questionnaire is about 10 minutes. Questionnaires will be coded to allow matching of doctors and patients. The confidentiality of patients, doctors, and practices will be preserved at all times.

Appendix 4a. GPs' information sheet *(GPIS/P1/V2- 03.01.2009).*

What are the possible risks and disadvantages of taking part?
It is not anticipated that asking about your expectations related to back pain consultation would cause any harm. Much of the information you will give through completion of the questionnaire is not sensitive or contentious but relates to expectations and attitudes around back pain management. No sensitive, difficult to answer, or upsetting questions are included in the questionnaire. All information will be anonymous. Safety, dignity, and well-being of all participants will be insured at all times. However if you become concerned, for any reason, about any aspect of the study, you can choose not to continue.

What if something goes wrong?
If you have any concerns about the way this research is being conducted, please contact the principal investigator, Ehab Georgy. If you are not satisfied with the response you receive or would rather take your complaint elsewhere, please contact Dr Eloise Carr or Prof Alan Breen as they will be ready to answer and respond to any of your concerns (contact details on bottom of leaflet).

What are the possible benefits of taking part?
The greatest benefit is likely to come in the future; the results of this study will help to shape best practice for managing back pain expectations in primary care. The way and extent to which patients and doctors expectations are met may affect the consultation in different ways. Unmet expectations may lead to adverse effects on the consultation outcome and satisfaction with care. Matched patients' and doctors' expectations may lead to better quality of patient − doctor communication as well as better consultation outcome. Further understanding of patients' and doctors' expectations could improve the clinical process of care, health care delivery systems and health services research.

What will happen to the results of the research study?
The results of the study will contribute to the understanding of the role of matched expectations in back pain care. In addition, research results will be made available (in a complete anonymity) through journal publications and conference presentations. A summary of results will be sent to you at the end of the study as we expect you as an important contributor for dissemination of the research findings.

Who is organising and funding the research?
The study is being carried out by research team at Bournemouth University. The study is being funded by the School of Health and Social Care at Bournemouth University.

Who has reviewed the study?
The study has been reviewed and approved by Bournemouth University School of Health and Social Care Research Committee and the Dorset Research Ethics Committee (NHS).

Investigators:
Ehab Georgy is a Physiotherapist with special interest in back pain. He has been involved in previous studies investigating new approaches for management of back pain and currently working within an interprofessional team on a project for improving back pain management.
Dr Eloise Carr is the Associate Dean for Postgraduate Students, Bournemouth University. Her professional background is nursing and she enjoys working interprofessionally and bringing different disciplines together on health related topics. She has published many articles, developed pain open and e-learning, two textbooks and a video related to pain management. She has been voted onto the British Pain Society's Council.
Prof. Dr. Alan Breen is Professor of Musculoskeletal Health Care at the Anglo-European College and the Director of The Institute for Musculoskeletal Research & Clinical Implementation. His research is focusing on clinical outcomes in musculoskeletal problems, including the development and implementation of evidence-based guidelines. Alan has published many articles and has been involved in writing the European Guidelines for management of acute low back pain.
Dr. Charles Campion-Smith is a general practitioner with an interest in interprofessional learning in primary care. His particular interests include clinical service improvement as well as promoting & developing interprofessional education as a way of improving collaboration between practitioners and organisations.

Contact details:
Ehab Georgy: egeorgy@bournemouth.ac.uk   **Tel: 075 88551470**
Dr Eloise Carr: ecarr@bournemouth.ac.uk   **Tel: 01202 962163**
Prof Alan Breen: imrci.abreen@aecc.ac.uk   **Tel: 01202 436 276**

BackCare
Helpline: 0845 130 2704
www.backcare.org.uk

Appendix 4a. GPs' information sheet *(GPIS/P1/V2- 03.01.2009).*

RESEARCH INFORMATION SHEET

Back Pain Management in Primary Care:
Development of a Questionnaire for Doctors' and Patients' Expectations and the Significance of Matched Expectations

> **You are being invited to take part in a research project. Here is some information to help you decide whether or not to take part. Please take time to read the following information carefully. Please ask us if there is any unclear points or if you would like more information.**

Introduction

Among patients presenting with back pain, expectations for care are common. Doctors as well seem to have their own expectations. Better service outcome is thought to be associated with higher doctor-patient agreement. Further understanding of patients and doctors' expectations could improve the health care service.

What is the purpose of this study?

The purpose of this part of the study is to explore patients and doctors' expectations related to back pain consultation, using a newly designed questionnaire, as well as to investigate how matched are the patients and doctors' expectations.

Why have I been chosen?

You have been requested to take part in this study because you have had at least one recent recorded back pain consultation with your GP and had not recently been involved in other back pain studies.

Do I have to take part?

Participation is completely voluntary. It is up to you to decide whether or not to take part. There will be no negative consequences if you decide not to take part. If you decide to take part, you are still free to withdraw at any time without giving a reason.

Will my taking part in the study be kept confidential?

All details will be kept completely confidential on a password protected computer. No-one else other than the research team will have access to your details. The study results will be presented in such a way that all individuals' details cannot be identified.

What will the study involve?

A 21-item questionnaire, related to back pain patients and doctors' expectations of consultation, was designed and will be given to patients and doctors to explore their expectations and to investigate the matching of patients and doctors' expectations.

What do I have to do?

If you choose to take part, you will be given a pack containing an information sheet, a copy of the Patients Expectations Questionnaire and a prepaid addressed envelope. You will have to fill in the questionnaire then mail it in the prepaid envelope. Time needed to complete the questionnaire is estimated to be about 5-10 minutes. Questionnaires were designed to be brief, understandable and easy to complete. Questionnaires will be coded to allow matching of doctors and patients. Confidentiality of the details will be preserved at all times.

Appendix 4b. Patients' information sheet *(PIS/P1/V3- 16.02.2009).*

What are the possible risks and disadvantages of taking part?

It is not expected that asking about your back pain and your expectations would cause any harm. Much of the information you will give through completion of the questionnaire is not sensitive or contentious but relates to expectations around back pain. No sensitive, difficult to answer, or upsetting questions are included in the questionnaire. Safety, dignity, and well-being of all participants will be insured at all times. However if you are concerned, for any reason, about any aspect of the study, you can choose not to participate.

What if something goes wrong?

If you have any concerns related to your back pain or you felt any distress as a result of filling in the questionnaire, you can contact the research team or telephone helpline of BackCare organisation (A charity organisation for promoting healthier backs), who will help address your concerns and provide information and explanation. If you have any concerns about the way this research is being conducted, please contact the principal investigator, Ehab Georgy. If you are not satisfied with the response you receive or would rather take your complaint elsewhere, please contact Dr Eloise Carr or Prof Alan Breen as they will be ready to respond to any of your concerns (contact details below).

What are the possible benefits of taking part?

Some people find it very helpful to talk to others about their expectations and opinions. However, the greatest benefit is likely to come in the future; the results of this study will help to shape best practice for managing back pain expectations in primary care. The way and extent to which patients and doctors' expectations are met may affect the consultation in different ways. Unmet expectations may lead to adverse effects on the consultation outcome and satisfaction with care. Matched patients and doctors' expectations may lead to better quality of patient-doctor communication as well as better consultation outcome.

What will happen to the results of the research study?

The results of the study will contribute to the understanding of the role of matched expectations in back pain care. In addition, research results will be made available (in a complete anonymity) through journal publications and conference presentations. A summary of results will be sent to you at the end of the study as we expect you as an important contributor for dissemination of the research findings.

Who is organising and funding the research?

The study is being carried out by research team at Bournemouth University. The study is being funded by the School of Health and Social Care at Bournemouth University.

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Dr Eloise Carr is the Associate Dean for Postgraduate Students, Bournemouth University. Her professional background is nursing and she enjoys working interprofessionally and bringing different disciplines together on health related topics. She has published many articles, developed pain open and e-learning, two textbooks and a video related to pain management. She has been voted onto the British Pain Society's Council.

Prof. Dr. Alan Breen is Professor of Musculoskeletal Health Care at the Anglo-European College and the Director of The Institute for Musculoskeletal Research & Clinical Implementation. His research is focusing on clinical outcomes in musculoskeletal problems, including the development and implementation of evidence-based guidelines. Alan has published many articles and has been involved in writing the European Guidelines for management of acute low back pain.

Dr. Charles Campion-Smith is a GP with an interest in interprofessional learning in primary care. His particular interests include clinical service improvement, and promoting interprofessional education as a way of improving collaboration between practitioners and organisations.

Contact details:

Ehab Georgy: egeorgy@bournemouth.ac.uk	**Tel: 075 88551470**	*BackCare*
Dr Eloise Carr: ecarr@bournemouth.ac.uk	**Tel: 01202 962163**	**Helpline: 0845 130 2704**
Prof Alan Breen: imrci.abreen@aecc.ac.uk	**Tel: 01202 436 276**	**www.backcare.org.uk**

Appendix 4b. Patients' information sheet *(PIS/P1/V3- 16.02.2009).*

School of Health and Social Care

BU Bournemouth University

Doctors' Expectations Questionnaire

Agreement between patient and doctor regarding diagnostic and treatment plans

Better Health outcome (2)

Higher Satisfaction (1)

Perception of Improvement (4)

Higher quality of interaction (3)

The purpose of this questionnaire is to identify patients and doctors' expectations related to back pain consultation, which will help understand the importance of matched expectations for both patients and doctors.

Expectations are defined as predictions or anticipations formulated by the individual about specific actions, interventions, or attitudes that are likely to happen during the consultation.

Age: _____

Gender: ☐ Male ☐ Female

Years in General Practice: _____

Number of Hours/week spent in direct patient care: _____

Do you have any special training or advanced skills for management of back pain? _____

For any further information or questions, Please do contact us:
Ehab Georgy: 079 1590 3171
Dr Eloise Carr: 01202 962 163
Prof Alan Breen: 01202 436 276

We would like to
Thank you
For your contribution to the research project

Code ( )

Code ( )

Appendix 5a. The GPs' Expectations Questionnaire (EQ) - Version 5.

Please complete all items on this questionnaire. Other comments or feedback are welcome. Please read each statement and state your level of agreement or disagreement with them.

	Strongly agree	Agree	No strong opinion	Disagree	Strongly disagree
1. I expect to ask the patient about their expectations					
2. I expect the patient to express their expectations					
3. I expect to ask the patient about any unmet expectations at the end of the consultation					
4. I expect to be warm and friendly during the consultation					
5. I expect to show interest and be willing to listen to the patient's problems					
6. I expect to discuss patient's fears and doubts					
7. I expect to explore the impact of back pain on the patient's social life and emotional well-being					
8. I expect to take full history of the current problem and all relevant past illness during the consultation					
9. I expect a typical back pain consultation to include a comprehensive physical examination					
10. I expect the patient to ask for referral					
11. I expect the patient to ask for tests or investigations to be done					
12. I expect the patient to ask for prescription/medication					
13. I expect to give the patient adequate explanation of what might be the cause of the problem					
14. I expect to provide adequate information about the problem					
15. I expect to give education about management of pain and stress					
16. I expect to provide information about prognosis					
17. I expect to discuss with the patient their own beliefs about the problem and its possible causes					
18. I expect to discuss with the patient their own ideas about management					
19. I expect to involve the patient in the decision-making process					
20. I expect the consultation to be of adequate duration for patient to express needs and receive advice					
21. I expect to be able to help the patient with their back pain					

Other comments or feedback:

We would like to
Thank you
For your contribution to the research project

Appendix 5a. The GPs' Expectations Questionnaire (EQ) - Version 5.

School of Health and Social Care

Patients' Expectations Questionnaire

Agreement between patient and doctor regarding diagnostic and treatment plans

BU
Bournemouth University

(2) Better Health outcome

(4) Perception of Improvement

(1) Higher Satisfaction

(3) Higher quality of interaction

The purpose of this questionnaire is to identify patients and doctors' expectations related to back pain consultation, which will help understand the importance of matched expectations for both patients and doctors.

Expectations are defined as predictions or anticipations formulated by the individual about specific actions, interventions, or attitudes that are likely to happen during the consultation.

Code (   )

Age: _____

Gender:
☐ Male
☐ Female

Level of education/qualification: _____

Occupation: _____

How long have you had your back pain? _____

For any further information or questions, Please do contact us:
Ehab Georgy: 079 1590 3171
Dr Eloise Carr: 01202 962 163
Prof Alan Breen: 01202 436 276

We would like to
Thank you
For your contribution to the research project

Code (   )

Appendix 5b. The Patients' Expectations Questionnaire (EQ) - Version 5.

Please complete all items on this questionnaire. Other comments or feedback are welcome. Please read each statement and state your level of agreement or disagreement with them.

	Strongly agree	Agree	No strong opinion	Disagree	Strongly disagree
1. I expect my GP to ask about my expectations	☐	☐	☐	☐	☐
2. I always express my expectations to my GP	☐	☐	☐	☐	☐
3. I expect my GP to ask about any unmet expectations at the end of the consultation	☐	☐	☐	☐	☐
4. I expect my GP to be warm and friendly during the consultation	☐	☐	☐	☐	☐
5. I expect my GP to show interest and be willing to listen to my problems	☐	☐	☐	☐	☐
6. I expect my GP to discuss my fears and doubts	☐	☐	☐	☐	☐
7. I expect my GP to ask about the impact of pain on my social life and emotional well-being	☐	☐	☐	☐	☐
8. I expect my GP to take full history of the current problem and all relevant past illness	☐	☐	☐	☐	☐
9. I expect a comprehensive physical examination to be done by my GP during consultation	☐	☐	☐	☐	☐
10. I expect my GP to refer me to a specialist or other service (for example, physiotherapy)	☐	☐	☐	☐	☐
11. I expect my GP to order some tests or investigations	☐	☐	☐	☐	☐
12. I expect my GP to prescribe some medication	☐	☐	☐	☐	☐
13. I expect my GP to give adequate explanation of what might be the cause of the problem	☐	☐	☐	☐	☐
14. I expect to receive adequate information about the problem	☐	☐	☐	☐	☐
15. I expect to receive education about how to manage my pain and stress	☐	☐	☐	☐	☐
16. I expect to receive information about prognosis	☐	☐	☐	☐	☐
17. I expect my GP to discuss my own beliefs about the problem and its possible causes	☐	☐	☐	☐	☐
18. I expect my GP to discuss my own ideas about management	☐	☐	☐	☐	☐
19. I expect to be involved in the decision-making process	☐	☐	☐	☐	☐
20. I expect the consultation to be of adequate duration for me to express needs and receive advice	☐	☐	☐	☐	☐
21. I expect my GP to be able to help me with my back pain	☐	☐	☐	☐	☐

Other comments or feedback:

If you would like to talk more about this topic, you are invited to join a group discussion that will involve a group of 6-8 patients to explore the importance of matched patient-doctor expectations and will last for 30 - 45 minutes. Convenient date and venue will be arranged with you. Light refreshments will be available. If you'd like to be considered for such group discussion, please provide your contact details and we will contact you with more information.

Telephone: ……………………………   or   email: ……………………………………………

Appendix 5b. The Patients' Expectations Questionnaire (EQ) - Version 5.

Validity of the Expectations Questionnaire

Looking back at all the questions of the newly-designed Expectations Questionnaire, please state your agreement or disagreement with the following statements:

1= Strongly Disagree	2= Disagree	3= Neutral	4= Agree	5= Strongly Agree

	1	2	3	4	5
1. The questionnaire was clear and easy to understand	○	○	○	○	○
2. It was easy to complete the questionnaire	○	○	○	○	○
3. The questions are common and familiar	○	○	○	○	○
4. The answer format was clear and acceptable	○	○	○	○	○
5. There were no repetitive questions	○	○	○	○	○
6. The questionnaire was attractive in general	○	○	○	○	○
7. The questionnaire was perceived as useful and worthwhile the time needed to fill it in	○	○	○	○	○

How long did it take you to fill in the questionnaire?

○ Less than 10 minutes

○ 10-20 minutes

○ 20-30 minutes

○ 30-40 minutes

○ More than 40 minutes

Other comments on wording or clarity related problems:

Any difficulty experienced in answering the statements:

We would like to ***thank you*** for your contribution to the research project

Appendix 6. The face validity testing questionnaire.

Patients' Intentions Questionnaire (PIQ)[1-2]

This questionnaire consists of 34 statements about what you might want from your GP during a given consultation. Please state your agreement or disagreement with each statement.

	Statement	*Agree*	*Uncertain*	*Disagree*
1	*I want my GP to understand the problem*			
2	*I want my GP to explain what is wrong*			
3	*I want help with the problem*			
4	*I want my GP to talk about the problem*			
5	*I want to know what my symptoms mean*			
6	*I want to be sure nothing is wrong*			
7	*I want to know how long will it take until recovery*			
8	*I want to know if I will have problems in future*			
9	*I want to know the course of the problem*			
10	*I want to know how serious the problem is*			
11	*I want my GP to understand my view*			
12	*I want to be examined for cause*			
13	*I want my GP to explain the treatment*			
14	*I want to know why I am feeling this way*			
15	*I want to know if problem is related to other parts of life*			
16	*I want to be able to talk about own feelings*			
17	*I want to know why I am reacting this way*			
18	*I feel anxious and I would like my GP to help*			
19	*I want support with my problem*			
20	*I want to be able to discuss certain life problems*			
21	*I want to be told about others with the same problem*			
22	*I want to receive comfort*			
23	*I want my emotional problems explained*			
24	*I want treatment for nervous condition*			
25	*I want help with emotional problems*			
26	*I want help with marital/sexual problem*			
27	*I want some tests to be done*			
28	*I want to know of any side effects*			
29	*I want to know if problems are real*			
30	*I want some test results*			
31	*I want my GP to explain the test results*			
32	*I want a previous diagnosis confirmed*			
33	*I want advice on a drug I am taking*			
34	*I want to be referred to a specialist*			

Thank you for taking the time to complete this questionnaire.

[1] **Salmon P and Quine J (1989).** Patients' intentions in primary care: Measurement and preliminary investigation. *Psychology & Health, 3(2): 103 – 110.*

[2] **Williams S, Weinman J, Dale J and Newman S (1995).** Patient expectations: what do primary care patients want from the GP and how far does meeting expectations affect patient satisfaction? *Journal of Family Practice 12(2):193-201.*

Appendix 7. The Patients' Intentions Questionnaire (PIQ).

Figure 7 Sample size calculation

Appendix 8. The Raosoft online sample size calculator.

The Royal Bournemouth and NHS
Christchurch Hospitals
NHS Foundation Trust

The Royal Bournemouth Hospital
Castle Lane East
Bournemouth
BH7 7DW

01202 303626
www.rbch.nhs.uk

Ehab Georgy
Bournemouth University
Second Floor, Royal London House
Christchurch Road
Bournemouth
BH1 3LT

16th June 2009

Dear Mr Georgy,

Reference: **BACK PAIN MANAGEMENT IN PRIMARY CARE – VERSION 1.2**
REC reference: **09/H0201/11**

I am pleased to inform you that this project has now received approvals from all parties and that you now have formal permission to start.

Please let me know when you officially start and I would be grateful for a progress report annually.

Good luck with the study,

Dr R. M. Chapman
Head of Research

INVESTOR IN PEOPLE

Appendix 9. The Research Ethics Committee approval letter.

18th March 2010

Dear Doctor…..,

I hope you are well.

I would like to thank you very much for your recent recruitment activity and I would like to briefly update you about recruitment for the back pain patients' expectations project.

The recruitment for the above study is still ongoing and I would very much appreciate it if you would kindly help us reach our targeted sample size by giving out the information packs to all patients consulting for their back pain in your practice.

If you have run out of questionnaires, please inform me *(egeorgy@bournemouth.ac.uk – 07915903171), and I will send you some extra copies as soon as possible.

The number of your patients that have successfully completed and returned the questionnaire is shown in the table below (greyed), alongside patients from other practices.

GP	Dr.1	Dr.2	Dr.3	Dr.4	Dr.5	Dr.6	Dr.7	Dr.8	Dr.9
Target	10	10	10	10	10	10	10	10	10
Recruited	0	1	3	4	1	0	4	4	3

GP	Dr.10	Dr.11	Dr.12	Dr.13	Dr.14	Dr.15	Dr.16	Dr.17	Total
Target	10	10	10	10	10	10	10	10	170
Recruited	7	0	0	8	0	0	0	0	35

I very much appreciate your support and interest in the project and I wish you all success.
Thank you for your time!
Kind regards,
E Georgy
Doctoral Candidate
Research Project Chief Investigator
School of Health & Social Care (HSC)
Bournemouth University
Tel: 01202 962181 or Mob: 07915903171

Appendix 10. Recruitment updates.

Telephone interview guide

- Total expected time: 10-15 minutes.
- Participants would be informed that interviews were recorded and that all data are kept in secure storage place and are presented anonymously and that confidentiality is maintained at all times.

I. Introduction:

My name is Ehab; I am the principal investigator in the Back Pain Expectations study. Many thanks for agreeing to take part in this telephone interview as well as for all your valuable participation and support throughout the study. It is very much appreciated. We have now finished collecting data about back pain patients' and doctors' expectations of the consultation, in order to investigate its matching; in this final stage of the study we are interested in exploring the perceived importance of having matched patient-doctor expectations for different aspects of the consultation.

II. Warm-up questions:

Let me start first by asking you: What are your main objectives during a back pain consultation? Do you have like a specific agenda for the consultation?

Probes:
- Are these objectives generic or could be back pain specific?
- Medical versus psycho-social interventions.

III. Main Discussion:

From your perspective and own perception, what is the importance of having matched patient-doctor expectations during the consultation, in relation to aspects of diagnosis, diagnostic plan and management approach?

Probes:
- Interaction and communication
- Compliance and adherence to advice or treatment
- Satisfaction
- Symptom improvement

IV. Closing:

Finally, in your opinion, what are the possible barriers and to a matched state?

Appendix 11. Telephone interview guide.

Interview	Codes	Themes
(Agenda): The assessment first of all; so obviously to assess severity and whether there is any immediate treatment; the red flags are priority first of all to exclude serious things,	Assessment. Bio-medical.	T.a1 T.a1
and then working out the management plans that are acceptable to the patients really and that fit in with their lives and enables them to do whatever they can really,	Psycho-social. Patient-centred.	T.a1 T.a1
and also try to take advantage of whatever services I have got available.		
(Perceived importance of matched expectations): It is a huge, really, kind of thing, because we know now, the importance of matched expectations is not just about back pain but for anything,	High Significance.	T.b1
and it is particularly becoming an issue as with regard to prescribing now, about how patients…., or prescribing things which you know patients are going to take; so they will want to take them and then understand it all. I think the old fashioned idea, which we were brought up on, saying that we dished out the medicine to the patient and if there was a problem it was their fault if they didn't take it has got out of the window now and you got to quite understand why they do not want to take medicine and try to find a solution that they are happy with,	Adherence to treatment.	T.b3
which is more difficult than it used to be.	Difficult to achieve.	T.b4
(Compliance & adherence): Having good empathy with the patient and understand how their back pain is affecting them - because obviously there are often psychological factors that will overlie things in back pain; and there are some patients where obviously there is all the sort of major physical things to another back pain where there are other psychological yellow flag things as well, which they are aware of as the effect of back pain with regards to their job relationships and other things like that.	Empathy. Mutual understanding of nature of problem.	T.b1 T.b2
Some people do, I am sure, use back pain or it comes up as a symptom of depression and anxiety , or other things like that , or a reasons to get signed off sick from work.		
I suppose I am keen to sort of see where the patient is coming from and try to make them understand the implications of that; I suppose in particular, a very common one is that if you think they want to take time off work, if they just want to take a long holiday really, is that it can affect their employability for the future and they have got to know are consequences of whatever they do and be fully aware of the long term consequences as well as the short one, of just having a week off work then also means they are labelled as a back pain person at work and people might not want to employ them.	Shared-decision making. Informed decision making. Challenging mistaken beliefs and expectations. Mutual understanding of problem.	T.b2 T.b2 T.b4 T.b2
(Interaction and communication): Yes, for two things. Firstly, I think knowing if there is something that they want and quite often, particularly junior doctors, actually don't have the experience to offer a range of things and they are very much issuing the treatment that they see written in text books. Sometimes patients come to us, I think, expecting a magic wand which we haven't got, so I think that's helpful as well if actually asking them straight off 'what are you expecting from me?' and I think some people will just say well I just want you to make me better. And it is helpful for them to know that we have not got an answer a lot of the time and pass the responsibility back to them so that they don't see that we are the ones who are taking responsibility of their pain.	Discussing and agreeing realistic goals/plan based on matched patient-doctor expectations. Challenging mistaken beliefs and expectations	T.b2 T.b4
It is actually the patients' pain and it's the patients' back and they have got to live with it, and to try and put it back to them and I usually ask them what they want, because sometimes there is nothing we got to offer them which we haven't done already. They have reached the end of the line; you have had everything and you got to live with this.	Challenging mistaken beliefs and expectations.	T.b2
(Satisfaction): Yes. Greatly I think. I mean we used to talk about 'heartsink' patients, and I think one type of 'heartsink' patients was a patient with chronic back pain who kept coming back. And I think 'heartsink' patients a lot of it is actually this issue of the doctors' feeling they should be doing something and the patients' feeling that it is the doctors' responsibility and not having this sort of matched expectations and understanding; I think it is actually easier when you know that the patient had all the investigations done.	Empathy and understanding. Discussing and agreeing realistic goals/plan. Challenging mistaken beliefs and expectations	T.b1 T.b2 T.b4
(Barriers): I suppose and I know you are not British but I think that culture and language are a big factor. Certainly not understanding what a patient's background, what their expectations are and where they are coming from really, which I think is difficult for us with cultures we are not familiar with.	culture and language background	T.c1

Appendix 12. Example of a transcribed, coded and thematically analysed interview

Themes: T.a1= biomedical versus psychosocial models, T.b1=empathy, T.b2=communication, T.b3=adherence, T.b4=satisfaction, T.c1=barriers

Patients' Expectations Questionnaire	GPs Expectations Questionnaire
I demonstrate to my GP the true reason for the visit.	I expect the patient to tell me the true reason for their visit.
I feel my GP knows the reason for the visit.	I would know the patient's reason for the visit.
I expect my GP to ask me about the reason for the visit.	I ask the patient about their reason for the visit.
I expect to express my expectations to my GP.	I expect the patients to express their expectations.
I expect my GP to ask me about my expectations.	I would ask the patient about their expectations.
I expect my GP to ask about any unmet expectations at the end of the consultation.	I would ask the patient about any unmet expectations at the end of the consultation.
I have no expectations regarding the consultation.	I have no expectations regarding the consultation.
I expect the GP to be warm and friendly.	I expect to be warm and friendly.
I expect the GP to believe my pain is genuine and my symptoms are real.	I expect the patient's pain to be genuine and their symptoms are real.
I expect my GP to show interest and be willing to listen.	I expect to express interest and be willing to listen
I expect my GP to discuss my problems, fears and doubts.	I expect to discuss patients' fears and doubts.
I expect the GP to ask about the impact of pain on my social life and emotional well-being.	I expect to explore the impact of pain on the patient's social life emotional well-being.
I expect my GP to consider the subjective impact of pain rather than concentrating on the medical aspects only.	I expect to consider the psychosocial as well as the biomedical aspects of the problem.
I expect to follow the GP advice and be compliant.	I expect the patient to be compliant with advice.
I expect a full history taking to be done by my GP during the consultation.	I expect to take full account of the relevant history during the consultation.
I expect a thorough physical examination during the consultation.	I expect to conduct a thorough physical examination during the consultation.
I expect that my GP will know the reason or cause of pain.	I expect to know the reason or cause of pain.
I expect to be given an accurate diagnosis of my problem.	I expect to provide an accurate diagnosis.
I expect that the GP will explain what is wrong.	I expect to explain what the problem is.
I expect to receive relevant advice and information.	I expect to give relevant advice and information.
I expect to be reassured by the GP.	I expect to provide reassurance.
I expect to be given adequate education on how to manage my problem.	I expect to provide adequate education on how the patient can manage the problem.
I expect to receive information about prognosis.	I expect to provide information about prognosis.
I expect my GP to discuss my own beliefs about the problem and its causes.	I expect to discuss the patients' own beliefs about the problem and its causes.
I expect my GP to discuss my own ideas about the management.	I expect to discuss with the patient their own ideas about the management.
I expect to be included in the process of decision-making.	I expect to involve patients in the decision-making.
I expect my GP to refer me to a specialist or a physiotherapist.	I expect to refer the patient to a specialist or a physiotherapist.
I expect my GP to order some tests or an X-ray.	I expect to order tests, investigations or an X-ray.
I expect my GP to give me a prescription.	I expect to give a prescription.
I expect my GP to be able to help me with my back pain.	I expect that I would be able to help the patient with the back pain.
I expect my GP to be capable of resolving my back problem.	I expect the patient to believe that I will be capable of resolving their back problem
I expect my GP to be able to deal with my back pain in a primary care setting without the need for referral.	I expect to be able to deal with the back pain in a primary care setting, without the need for referral.
I think other health care professionals (e.g., physiotherapists) have more advantages over GPs and will be more capable of helping me manage my back pain.	I think other health care professionals (e.g., physiotherapists) have more advantages over GPs in managing back pain and will be more capable of helping the patients.
I feel pressurised and stressed due to time limits during the consultation.	I feel pressurised and stressed due to time limits during the consultation.
I expect to be satisfied after the consultation.	I expect the patient to be satisfied after the consultation.
I am satisfied with the current back pain management in primary care.	I am satisfied with the current back pain management in primary care.

Appendix 13. Version 1 of the Expectations Questionnaire – 36 items.

Patients' Expectations Questionnaire	GPs Expectations Questionnaire
I expect my GP to ask me about the reason for the visit.	I ask the patient about their reason for the visit.
I expect to express my expectations to my GP.	I expect the patients to express their expectations.
I expect my GP to ask me about my expectations.	I would ask the patient about their expectations.
I expect my GP to ask about any unmet expectations at the end of the consultation.	I would ask the patient about any unmet expectations at the end of the consultation.
I expect the GP to be warm and friendly.	I expect to be warm and friendly.
I expect the GP to believe my pain is genuine and my symptoms are real.	I expect the patient's pain to be genuine and their symptoms are real.
I expect my GP to show interest and be willing to listen.	I expect to express interest and be willing to listen
I expect my GP to discuss my fears and doubts.	I expect to discuss patients' fears and doubts.
I expect the GP to ask about the impact of pain on my social life and emotional well-being.	I expect to explore the impact of pain on the patient's social life emotional well-being.
I expect a full history taking to be done by my GP during the consultation.	I expect to take full account of the relevant history during the consultation.
I expect a thorough physical examination during the consultation.	I expect to conduct a thorough physical examination during the consultation.
I expect my GP to know the cause of problem.	I expect to know the reason or cause of pain.
I expect that the GP will explain what is wrong.	I expect to explain what the problem is.
I expect to receive adequate information about the problem.	I expect to provide adequate information about the problem.
I expect to receive adequate education on how to manage my pain.	I expect to provide adequate education on how the patient can manage the problem.
I expect to receive information about prognosis.	I expect to provide information about prognosis.
I expect my GP to discuss my own beliefs about the problem and its causes.	I expect to discuss the patients' own beliefs about the problem and its causes.
I expect my GP to discuss my own ideas about the management.	I expect to discuss with the patient their own ideas about the management.
I expect to be involved in the process of decision-making.	I expect to involve patients in the decision-making.
I expect my GP to refer me to a specialist or a physiotherapist.	I expect to refer the patient to a specialist or a physiotherapist.
I expect my GP to order some tests or an X-ray.	I expect to order tests, investigations or an X-ray.
I expect my GP to give me a prescription.	I expect to give a prescription.
I expect my GP to be able to help me with my back pain.	I expect that I would be able to help the patient with the back pain.
I expect my GP to be able to deal with my back pain in a primary care setting without the need for referral.	I expect the patient to believe that I will be able to deal with the back pain in a primary care setting, without the need for referral.
I think other health care professionals (e.g., physiotherapists) have more advantages over GPs and will be more capable of helping me manage my back pain.	I think other health care professionals (e.g., physiotherapists) have more advantages over GPs in managing back pain and will be more capable of helping the patients.
I feel pressurised and stressed due to time limits during the consultation.	I feel pressurised and stressed due to time limits during the consultation.

Appendix 14. Version 4 of the Expectations Questionnaire – 26 items.

Boston International Forum X
Primary Care Research On Low Back Pain
June 14–17, 2009 • Boston, MA

Interactive poster session

Back Pain Management in Primary Care: Development of a Questionnaire for Doctors' and Patients' Expectations and the Significance of Matched Expectations.

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Background: Patient involvement in decision making and emphasizing the partnership principle between health organizations and patients are some of the current issues in back pain primary care. Among patients presenting with back pain, condition-specific expectations for care are common. Doctors as well seem to have their own agenda. Better service outcome is thought to be associated with higher doctor-patient agreement[1]. Further understanding of patients' and doctors' expectations could improve the clinical process of care, health care delivery systems and health services research[2]. The way and extent to which patients' and doctors' expectations are met is thought to be a strong contributing factor to a successful consultation. Yet, no previous study attempted to investigate congruency between patients' and doctors' expectations nor there is a valid measurement tool.

Methods: A mixed methods design study with intended sample size of 40 doctors and 400 patients. The study has three aims; firstly to identify patients' and doctors' condition - specific expectations; secondly, to explore the feasibility of using such expectations to design a structured questionnaire; and finally to investigate the congruency between patients' and doctors' expectations and its significance. A lack of congruency between patients' and doctors' expectations was detected during a series of workshops involving patients and doctors within the LIMBIC* project. Problem was confirmed through discussions and feedback from patients and doctors. Literature review produced a preliminary list of patients' and doctors' expectations. All collected data was used to produce a draft 36-item structured questionnaire which consisted of two matched parts for patients and doctors. Questionnaire will undergo factor analysis and will be tested for validity and reliability. The final version will be used to investigate congruency between patients' and doctors' expectations with further in-depth interviews to explore the significance of high/low matched expectations.

Preliminary results: Preliminary discussions with patients and review of literature showed that patients' main expectations were receiving information and explanation of problem, doctors showing interest, and to be examined by the doctor. On the other hand, doctors' expectations were mainly concerned with reaching sound diagnosis, prescribing effective treatment and reducing unnecessary referrals. Providing Information came late in doctors' expectations list. Review of literature generated a list of ideas about doctors' and patients' expectations that was used for questionnaire design. These included expectations about consultation, patients' initiatives, patients' and doctors' desires, preferences, attitudes and beliefs.

Conclusions: A questionnaire that can measure congruency between patients' and doctors' expectations will enable better understanding of the role of expectations and may lead to better quality of patient-doctor communication, higher compliance and concordance, better management strategies and higher level of satisfaction among patients and doctors in primary care settings. Back pain care will benefit from research that critically looks at doctors' and patients' expectations [3]. Efforts to improve back pain care, by further implementation of the guidelines, will only succeed when patients' and doctors' expectations and their effects on the outcome of service are optimized [3].

Appendix 15. Abstract & poster for the International Back Pain Forum 2008.

Appendix 15. Abstract & poster for the International Back Pain Forum 2008.

The Future of Primary Health Care in Europe III

Oral workshop presentation

The significance of matched patient-doctor expectations for a successful back pain consultation in primary care

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Background: Patients' expectations for care are common and meeting such expectations may play a vital role in concordance and satisfaction with the given treatment; yet, a more potent aspect that might affect the consultation is a state of matched patient-doctor expectations. Studies focusing on the matching of such expectations are lacking and the effect of its congruence on different aspects of the consultation is not well established in the literature.

Purpose: To investigate the matching of patients' and doctors' expectations in relation to back pain consultation as well as the perceived significance of such matching for a successful back pain consultation in primary care from the patient and doctor perspectives.

Methods: Mixed methods sequential nested design. Eleven doctors and 57 patients from 11 practices in the South of England completed the back pain expectations questionnaire that measured the matching of their expectations. Semi-structured telephone interviews of a sub-group of the patients and doctors were used for further exploration of the perceived importance of such matching on different aspects of the consultation.

Results: Analysis of the questionnaire data showed that the highest agreement between patients and doctors was for provision of adequate explanation of the problem (P_o= 100%). Two thirds of the questionnaire items showed a high to moderate patient-doctor agreement (P_o> 60%). Seven items revealed low patient-doctor agreement; those were the items related to referral, test ordering, prescription, the likelihood of the doctor discussing the patients' own beliefs and their ideas about the management as well as items related to patients expressing their expectations to the doctor during the consultation and doctors asking about any unmet expectations at the end of the consultation. Thematic analysis of the telephone interviews revealed two main themes for the perceived importance of matched expectations, which were better communication and interaction and higher adherence to the advice given.

Conclusion: Patients and doctors had high agreement regarding items related to doctors' characteristics and clinical attitude; yet, aspects related to psychosocial management of back pain, mainly discussing patients' expectations, beliefs and ideas seemed to be areas of mismatch. A state of matched patient-doctor expectations is perceived as important aspect for better communication and higher adherence to treatment.

Appendix 16. Abstract for the European Forum for Primary Care, Pisa, Italy 2010.

Research paper

Back pain management in primary care: patients' and doctors' expectations

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ABSTRACT

Background Expectations may be a key element for improving quality of health care, yet several barriers interfere with understanding and optimising expectations in back pain primary care.

Objective To review the literature related to expectations, back pain patients' and doctors' expectations and sources of unmatched expectations.

Methods Review of qualitative and quantitative studies investigating back pain management in primary care settings, and eliciting patients' and/or doctors' pre-visit or post-visit expectations.

Results Reviewing the literature reveals that expectations are defined and conceptualised in various ways, with several terms used interchangeably, which suggests a lack of clear definition and conceptual framework. Patients have a wide range of specific expectations for care, which can be measured, and may play a vital role in their satisfaction; doctors also seem to have their own expectations.

However, studies of such expectations are scarce and there is a lack of valid measurement tools to capture such aspects.

Discussion Shortcomings in literature included the use of different meanings and definitions for expectations, which interfered with understanding the results of previous research. Previous studies focused on patients' general rather than condition-specific expectations; no study explored doctors' expectations or the congruency between patients' and doctors' back pain-specific expectations.

Conclusions There is a need for standardisation of definition in expectations research and a valid measurement tool that is condition specific. Understanding patients' and doctors' expectations may be a key factor for improving quality of care, in terms of both process and outcome.

Keywords: back pain, expectations, primary care

How this fits in with quality in primary care

What do we know?
Fulfilment of expectations is one measure of the quality of health care. Understanding patients' and doctors' expectations could improve the clinical process of care and health services research; yet several barriers interfere with optimising expectations in back pain primary care. The research in this area has been growing, but is still relatively sparse and encounters some difficulties. Among these are the nature and great diversity of expectations, the various ways of communicating them, and the disagreement in the literature about methods to elicit and monitor expectations.

What does this paper add?
These difficulties are addressed in this review article; gaps in the literature are identified, recommendations for further research are suggested and some grey areas are discussed and clarified.

Appendix 17. Publication –Journal of Quality in Primary Care, 2009; 17:405-13.

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Are they thinking alike? Back pain patients and doctors expectations: A feasibility study

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ABSTRACT

Background and Objectives
Patient-doctor agreement is believed to promote the quality of interaction and satisfaction; yet, up to date, no study has attempted to investigate the matching of back pain patients' and doctors' expectations, nor is there a valid measurement tool. This study aims to explore the feasibility of using a newly designed questionnaire for investigating the congruence of patients' and doctors' expectations in relation to back pain consultation.

Methods:
A 26-item questionnaire was developed and was given to 20 patients and 11 doctors to rank their objective of the encounter and report their agreement with the expectation statements. Responses were compared to investigate the matching of patients' and doctors' expectations.

Findings:
Diagnosis, explanation of the problem, and referrals were the most important aspects for patients; explanation, effective pain relief, and information were common expectations for doctors. Patients agreed with doctors about most aspects of the consultation except for referrals, ability of doctor to help without referrals, as well as items related to sharing the reason for the encounter.

Conclusion:
The study reveals some areas of mismatch that might adversely affect the consultation. Further research is needed to consolidate these results and to establish the significance of matched expectations.

Keywords:
back pain, expectations, matching, congruence, primary care

Introduction

Affecting up to 2 in 3 of the adult population during the course of a year, back pain (BP) is a very common disorder, with an estimated fifth of the patients consulting their doctor about their condition (1, 2). Back pain is cited as one of the most common reasons for consulting a doctor (3). Biopsychosocial management of BP in primary care has been problematical (4), with many doctors seeing it as one of the difficult and unrewarding conditions to deal with in primary care (5). Over the last few decades, research in primary care has focused on understanding factors influencing the quality of healthcare, as well as ways to optimize expectations and enhance satisfaction with BP consultations. Although it may seem that patients' met expectations and satisfaction may be the key ingredients for a successful consultation,, and in addition to other clinical measures, might be important measures of the quality of the healthcare services; however, doctors' expectations may also be a strong contributing factor to a more successful consultation, as the clinicians' practice style and views are thought to affect outcome in BP care (6). Patient-doctor agreement is thought to promote higher satisfaction (7, 8), better general health outcomes (9, 10), as well as greater adherence to treatment (11). Most previous research suggested a negative impact of patient-doctor disagreement on the consultation outcome; yet, only few studies have addressed this issue (12). Moreover, literature pertaining to patient-doctor agreement is particularly scarce in the area of BP (12, 13). Previous studies focused on patients' general expectations rather than condition-specific ones and, to

Appendix 18. Publication – World Family Medicine Journal, 2010; 8(8): 3-11.

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Met or matched expectations: what accounts for a successful back pain consultation in primary care?

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Abstract

Background Patients' as well as doctors' expectations might be key elements for improving the quality of health care; however, previous conceptual and theoretical frameworks related to expectations often overlook such complex and complementary relationship between patients' and doctors' expectations. The concept of 'matched patient–doctor expectations' is not properly investigated, and there is lack of literature exploring such aspect of the consultation.

Aim The paper presents a preliminary conceptual model for the relationship between patients' and doctors' expectations with specific reference to back pain management in primary care.

Methods The methods employed in this study are integrative literature review, examination of previous theoretical frameworks, identification of conceptual issues in existing literature, and synthesis and development of a preliminary pragmatic conceptual framework.

Outcome A simple preliminary model explaining the formation of expectations in relation to specific antecedents and consequences was developed; the model incorporates several stages and filters (influencing factors, underlying reactions, judgement, formed reactions, outcome and significance) to explain the development and anticipated influence of expectations on the consultation outcome.

Conclusion The newly developed model takes into account several important dynamics that might be key elements for more successful back pain consultation in primary care, mainly the importance of matching patients' and doctors' expectations as well as the importance of addressing unmet expectations.

Introduction

The recent National Health Service (NHS) report 'High Quality Care For All' highlighted key messages for improving the quality of health-care services, mainly the importance of considering patients' opinions when developing care strategies.[1] In the health-care context, patients' expectations for care are common [2] and may play a vital role in their concordance with

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