PHYSIOTHERAPIST AND PATIENT PERSPECTIVES ON MANAGEMENT OF LOW BACK PAIN IN AN ARAB, ISLAMIC CONTEXT
ABSTRACT

Low back pain is a common health problem in all societies. It affects between 60% and 85% of adults at some time in their lives and is associated with individual suffering and substantial economic and societal costs. Non-specific acute and chronic low back pain account for about 90% of low back pain and its sufferers complain of somatic symptoms without clear specific cause. A number of studies have shown that cultural and psychosocial factors can be important in the prediction of both low back pain experience and disability.

This study aims to investigate the prevalence of low back pain and the socio-cultural influences on physiotherapy management of non-specific low back pain in the Gaza Strip, with a view to developing new strategies for future physiotherapy practice.

Research design combined quantitative and qualitative research approaches. A population-based survey was conducted to gather cross-sectional data about the prevalence of low back pain and its relationship to socio-demographic characteristics. Two Likert-type questionnaires were completed by experienced physiotherapists to determine their attitudes and beliefs about non-specific low back pain and its management in the Gaza Strip. Focus group interviews were then used to investigate the opinions of the Palestinian physiotherapists about the current provision of physiotherapy for low back pain and its implications in Gazan society. Focus groups also investigated patients' experiences of low back pain and opinions about their management.

Findings of the study showed that almost 30% of the population in the Gaza Strip experienced low back pain for at least one day during one year, one third of whom did not seek health care for their pain. Patient beliefs about back pain were that it can be relieved by rest and will not lead to permanent disability. Physiotherapists' beliefs were that low back pain is not a dangerous health problem and they treat their patients using a predominantly biomedical approach. Both physiotherapists and patients were dissatisfied with the outcomes of physiotherapy provided for low back pain in the Gaza Strip. They discussed issues related to the diagnosis and referral, advice given to patients, patients' own strategies for coping and how they affect the outcomes of physiotherapy and patient compliance.

This study presents a unique contribution to knowledge about the experience of low back pain sufferers in an Arab, Islamic context and shows how patient management is dependent on many factors, amongst which are cultural context and the interaction between attitudes and beliefs of both patients and health practitioners.
Acknowledgements

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Declaration

I declare that the research contained in this thesis, unless otherwise formally indicated within the text, is the original work of the author. The thesis has not been previously submitted to this or any other university for a degree, and does not incorporate any material already submitted for a degree.

Singed

Mohammed Naser

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1. Introduction

Low back pain (LBP) is a common health problem in all societies (Waddell, 2004). It is amongst the most prevalent of somatic complaints (Dionne, 1999), and associated with individual suffering and substantial economic and societal costs (Picavet and Schouten, 2003, DOH, 2006). It has been estimated that LBP affects between 70% and 85% of adults at some time in their lives (Frymoyer, 1988; Dionne, 1999). There is no evidence that its prevalence rates have been changed over the past five decades but the way in which individuals, health care providers and society respond to LBP has been changed. The definition "low back pain" is confusing as it only refers to pain in the lower area of the back without any reference to its cause or its pathology. Approximately 80% of LBP in primary care remains a diagnostic enigma and is commonly labelled non-specific low back pain (NSLBP) (Spengler and David, 1985; Deyo et al., 1992). In contrast, specific low back pain is caused by identifiable pathology, such as neuro-compression, cancer, infection, fracture and metabolic disorders. There is no one cause of NSLBP, but potential causes lie in predisposing and precipitating factors (Peters et al., 2005). In this thesis, the term "LBP" refers to non-specific LBP unless there is another clarification.

For many past decades, LBP had been considered as a medical problem, managed by a traditional biomedical model. In this model, LBP was interpreted as a signal of disease or injury, often attributed to the stress of work. The typical prescription was rest and inactivity until the injury resolved and pain abated. Failure of this model to stem increasing disability due to LBP and recognition of the role of psychosocial factors, in the course and outcome of LBP, led to the development of evidence based clinical guidelines for the management of LBP. In the absence of specific spinal pathology, all guidelines offer broadly similar advice, advising patients to keep active, continue normal activities, stay or return to work and to avoid bed rest and passive treatments (Koes et al., 2001; Airaksinen et al., 2006; van Tulder et al., 2006).
Despite positive research findings of using clinical guidelines for management of LBP, optimal treatment strategies for this condition remain uncertain. Some authors believe that NSLBP is heterogenous and comprises a number of discrete sub-groups for which subgroup-specific treatment could optimise outcomes (Maitland, 1986; McKenzie, 1987; Binkley et al., 1993; Hall et al., 1994; Delitto et al., 1995; Leboeuf-Yde et al., 1997; Newton et al., 1997; Petersen et al., 2003). Other researchers have argued that NSLBP is homogenous (Indahl, 1995; Indahl et al., 1998; Bogduk, 2000). In Australia, Kent and Keating (2004) found that 74% of primary health care professionals think that it is possible to recognise NSLBP subgroups, and 93% of them treat NSLBP differently based on patterns of symptoms and signs. There is much debate about the effectiveness of different treatment programmes, and despite an abundance of research, the UK BEAM trial suggested that the role of different physical treatments for NSLBP is unclear (UK BEAM, 2004).

Low back pain can be acute or chronic and can originate from mechanical or chemical disturbances of tissue or a combination of both (Deyo, 1993; Waddell, 2004). Pain can be experienced either locally at the site of injury or it can be referred into more distant areas. Many studies into the prevalence, risk factors and treatment of LBP have been published in western societies. Empirical studies have shown that misconceptions about LBP can be an important risk factor in predicting both pain experience and disability (Klenerman et al., 1995; Crombez et al., 1998; Linton and Hallden, 1998; Crombez et al., 1999; Linton, 2000; Buer and Linton, 2002; Picavet et al., 2002). These studies have indicated that negative beliefs of patients and healthcare providers about LBP can influence the development and management of the condition. Eccleston et al., (1997) have suggested that these misconceptions may be culture-related. These studies have indicated that different cultural groups perceive and respond to pain in different ways. Deyo (1998) suggested that people in western societies subscribe to what he called “myths” about LBP always being related to pathological damage, leading to unrealistically high expectations about diagnosis and treatment. Deyo’s beliefs about pain express ideas upon which older traditions of treatment have been based. These issues have not been investigated in Arab countries and there is no indication that health care professionals in Gaza follow certain guidelines in management of LBP yet.
Physiotherapy is currently a common intervention and physiotherapists are members of the multidisciplinary team caring for patients with LBP worldwide. In Britain, it has been estimated that 1.3 million (2.15% of the total population) people receive physiotherapy for LBP each year (OPCS, 1993). A further report from the UK indicates that physiotherapists spend 40% of their professional time treating patients with LBP (Goldby, 1997). In the Netherlands, 27% of all patients consulting physiotherapists suffer from LBP (Kerssens, et al., 1999), and 22% of the patients referred by general practitioners for physiotherapy have LBP (Kerssens and Groenewegen, 1990). In the USA, patients with LBP made up 25% of all discharges from physiotherapy practices and outpatient settings (Battie et al., 1994; Jette, et al., 1994). Recent findings from epidemiological studies provide similar figures (Krismer and van Tulder, 2007), and showed that physiotherapists are widely consulted by LBP patients internationally (Philadelphia Panel, 2001; Stanley et al., 2001; Moore and Hurley, 2005). The evidence that LBP constitutes a major problem in the western world is irrefutable, but little is known about the situation in the Arab World. To address this issue one of the objectives of this research was to investigate the epidemiology of the condition and its physiotherapy management in Gaza.

Treatment and prevention of LBP continues to be a major challenge for physiotherapists, because of the multi-factorial nature of causes, natural history of the condition (Spitzer et al., 1987) and associated influences of physical, psychological, social and economic factors (Frymoyer and Cats-Baril, 1987, Linton, 2000). The heterogeneity of LBP (Roland and Morris, 1983) presents a difficult situation for healthcare providers as a definitive diagnosis is not often possible (Spitzer et al., 1987; Deyo, 1993). This uncertainty has resulted in a variety of treatment practices that are based on clinical judgements rather than evidence based practice (UK BEAM, 2004).

The study reported in this thesis aimed to investigate the prevalence of LBP in the Gaza Strip and then concentrate on factors that might influence the delivery and outcome of physiotherapy for patients with NSLBP. In this thesis, the researcher endeavours to explain and explore the nature of NSLBP and describe and critique the approaches and modalities of physiotherapy used in the management of NSLBP. Also, by evaluating the available scientific evidence, the researcher highlights factors
that influence the progression of NSLBP and those interventions that are effective. The researcher investigated the prevalence of LBP in a randomised population-based telephone survey providing cross-sectional data about prevalence rates, risk factors and the impact of the problem of LBP in the Gaza Strip during twelve months. The perspectives of patients who received physiotherapy for NSLBP and physiotherapists treating them were examined in mixed approaches of quantitative and qualitative research.

2. Aim of the study

This research project sought to investigate the prevalence rates of low back pain and factors that might influence the delivery of physiotherapy for patients with non-specific low back pain in the Gaza Strip.

3. Objectives of the study

1. To investigate the prevalence of low back pain and its related risk factors in the Gaza Strip.
2. To explore the attitudes and beliefs of physiotherapists about non-specific low back pain and its management.
3. To determine current physiotherapy provision for patients with non-specific low back pain in the Gaza Strip.
4. To explore issues that may influence the provision of physiotherapy for non-specific low back pain and its outcomes in the Gaza Strip.
5. To explore the experiences of patients with non-specific low back pain in relation to the management of their condition, their coping strategies and the impact of non-specific low back pain on various aspects of their daily lives.

4. The importance of the study

The motivation for this study came from the interest of the researcher in improving the quality of physiotherapy provided for patients with LBP in the Gaza Strip and to develop his knowledge and skills in teaching musculoskeletal physiotherapy at Al-
Azhar University in Gaza. The study aimed to investigate the size of the problem, the experiences of physiotherapists and the beliefs and experiences of patients in the development and management of LBP in the Gaza Strip. Analysis of the outcomes of this study shows that:

- It provides statistics on the prevalence of LBP and its risk factors in the Gaza Strip. This is new knowledge for the health professionals and decision makers in the Gaza Strip.
- It provides new insights on professional and socio-cultural influences on the management of LBP in the Gaza Strip. These categories have not been studied before.
- It provides insights into physiotherapists' understanding and use of approaches to the management of patients with LBP. The issue of approaches to LBP has not been previously considered.
- It provides a holistic picture of the provision of physiotherapy and its implications in the Gaza Strip. This information has not been available before.

It is hoped that these sources of new knowledge will help physiotherapists and other health care professionals to provide culturally appropriate health care for patients with LBP by addressing some of the unique characteristics of Arab culture in the specific situation of the Gaza Strip and the implications of these characteristics for healthcare access and delivery.

5. Study setting

The Gaza Strip is the most southern part of Palestine. It is a narrow band of land wedged between the Mediterranean Sea, Egypt and Israel. Its length is 46 km and its width is 6-9 km with a surface area of 363 square km. It is one of the most densely populated areas in the world, with approximately 1.3 million Palestinians living there. People living in the Gaza Strip are Palestinians speaking the Arabic language and sharing the values and beliefs of Arabic culture. Approximately, 98% of the general public in the Gaza Strip are Moslems, with the remaining 2% Arab Christians. More than 70% of the population are refugees who entered the Gaza Strip during the Arab–Israeli conflict of 1948, 50% of them are living in eight refugee camps (UNRWA,
People in the Gaza Strip are distributed in five districts, with health services, including physiotherapy, present in every district. The participants for the various parts of this research were drawn from:

- The general population of the Gaza Strip.
- Palestinian physiotherapists.
- Patients who received physiotherapy for LBP.

Palestine has been occupied for nearly 400 years, successively by the Ottoman Empire, under the British Mandate and then under Israeli military rule. In 1994, the Gaza Strip became partially autonomous under the agreement between the Palestinian Liberation Organisation and Israel and the administration of Gaza’s health and social affairs was transferred from Israeli to Palestinian administration. Israel still controls the borders and many issues that affect the daily life of Palestinians in the Gaza Strip. The pressures caused by occupation may result in psychological, economic and social problems that can be risk factors for LBP.

6. Study design

To achieve the aim and objectives of the study, an overall survey approach was taken, using a mixture of quantitative and qualitative data collection and analysis strategies. Quantitative research strategies were advocated where the aim was to gather numerical data on the epidemiology of LBP and physiotherapists' attitudes, beliefs and recommendations for LBP and its management. Qualitative research strategies were employed to explore the experiences of physiotherapists and patients about the ongoing process of physiotherapy management of LBP. This mixed approach enabled the researcher to identify the size of the problem and to gain an understanding of the treatments provided for patients with LBP in the Gaza Strip. It also provided the researcher with an understanding of the factors that might influence the progress and management of the condition.

The investigation was designed to be carried out in two stages. The first stage included collecting data on the prevalence of LBP and the perceptions of
physiotherapists. The second stage included collecting data on the current physiotherapy provision and experiences of patients with NSLBP.

7. Outline of the thesis

The overall structure of the thesis consists of a number of studies that address different concerns related to the size of the problem of LBP and its physiotherapy management in the Gaza Strip. The thesis is presented in nine chapters.

**Chapter One: Low back pain**

This chapter discusses the problem of LBP and its management. A critical appraisal of the literature relevant to the aetiology and prevalence of the problem is presented. This chapter also presents information on the management of LBP with an emphasis on the different approaches of physiotherapy and evidence of their effectiveness. Characteristics of patients with LBP, their experiences and the impact of the problem on their behaviour are also included. This chapter highlights the influence of the socio-cultural determinants on the progress of LBP.

**Chapter Two: The realities of living in the Gaza Strip**

This chapter provides a description and critical evaluation of the cultural, religious and social influences that may influence the progress of symptoms of disease and illness. It also provides insights into the development of physiotherapy practice in the Gaza Strip and health services available there for patients with LBP.

**Chapter Three: Methodological approaches**

Chapter four describes the methodological approaches used to achieve the aims and objectives of the study, justifies the methods used and describes the role of the researcher with regard to the objectives of the study. It evaluates the quantitative and qualitative approaches with regard to their application in this research project.
Chapter Four: The prevalence of low back pain in the Gaza Strip

Chapter four presents a study investigating the prevalence of LBP in the Gaza Strip and the research methods employed in this study. It presents the results of the study with a discussion related to the literature of the prevalence of LBP.

Chapter Five: Physiotherapists’ attitudes, beliefs and recommendations for management of low back pain

This chapter describes Palestinian physiotherapists' attitudes, beliefs and recommendations about LBP symptoms and their management, as indicated in questionnaire responses. In particular, the chapter explores physiotherapists' understanding and use of biomedical and psychosocial models of management. The chapter also describes the methods and measurements used in the study. Results of the study are described and critically evaluated.

Chapter Six: Physiotherapists' views about management of low back pain in the Gaza Strip

Chapter six presents the views and experiences of physiotherapists in the management of LBP as indicated in their focus group discussions. Their evaluation of the impact of culture, social life and health care system operating in the Gaza Strip on the physiotherapy management of patients with LBP is also considered.

Chapter Seven: Experiences of patients who received physiotherapy for low back pain

This chapter presents the experiences of patients with LBP, as indicated in focus group discussions. It describes the impact of LBP on the different aspects of their life, the influence of their expectations from physiotherapy services and physiotherapists on the progress of their somatic complaints.
Chapter Eight: Discussion

Chapter eight discusses the methodologies employed and findings of the studies conducted in the project in light of pertinent literature in the field and the stated objectives of the research.

Chapter Nine: Conclusions and recommendations

This chapter draws conclusions from the findings of the study, discussing the impact of findings on physiotherapy practice and experiences of patients with LBP in the Gaza Strip. It also presents recommendations for future physiotherapy and research.
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1.1 Introduction

This chapter provides the background material necessary to understand the issues discussed in this thesis. Low back pain (LBP) is considered to be a complex pandemic disorder (Twomey and Taylor, 2000; Ekman et al., 2005). It has been estimated that 70-85% of all people have LBP at some time in their life (Dionne, 1999), with annual prevalence rates ranging from 15% to 45%, and point prevalence averaging 30% (Andersson, 1999). Reasons for the range of figures can be accounted for by differences in age, gender and different populations surveyed in the literature. It has also been reported that the majority (approximately 90%) of LBP patients, however, have symptoms that are non-specific in nature and appropriate for conservative management (Holdworth et al., 2006). Despite the growing number of international clinical and scientific investigators who use increasingly sophisticated technology (Hodges, 2000; Waddell, 2004) to investigate its possible causes and effects, clinical conservative management of LBP has changed little and remains controversial. There is general agreement that current interventions are based on the opinions of clinical gurus rather than sound empirical evidence (Foster et al., 1999; Twomey and Taylor 2000; Linton, 2002; Frost et al., 2004).

Researchers have faced difficulties in investigating the conservative management of LBP (Koes and Hoving, 1998; Waddell, 2004) as the perception of pain is unique to, and varies between, individuals (Turk et al., 2000; Pincus et al., 2007). Management of LBP falls in the domain of many medical and therapeutic disciplines (Trede, 2000), each of which has its own definitions, terms and management strategies. Obtaining evidence about clinical effectiveness from cohorts of symptomatic patients, who are classified differently, according to each respective discipline, hampers research and analysis (Koes and Hoving, 1998).
Low back pain is one of the main problems for which people seek physiotherapy, with data since 1994 showing that it accounts for approximately half the workload of physiotherapists, worldwide (Battie et al., 1994; Mielenz et al., 1997; Foster et al., 1999, Gracey et al., 2002; Holdsworth et al., 2006). Despite the high prevalence of LBP, it remains poorly understood and inadequately treated. This gives rise to concern because prospective longitudinal studies indicate that up to 35% of patients with acute LBP will develop recurrent or chronic pain (Croft et al., 1999; Waddell and Waddell, 2000).

Epidemiological literature set in western societies, has explored prevalence rates and potential risk factors of LBP, (Mason, 1994), in relation to physical characteristics (Han et al., 1997), life style (Leboeuf-Yde et al., 1996), workplace (Shelerud, 1998; Hartvigsen et al., 2000) and socioeconomic circumstances (Hoogendoorn et al., 2000; Waddell 2004). However, there is limited information about non-specific low back pain (NSLBP) and chronic back pain, partly because of a lack of agreement about definition, causes and classifications.

Although most studies on the prevalence of LBP have serious limitations in methodologies and sampling, they do provide statistics about the size of the problem and its risk factors. The literature is filled with data about the prevalence, incidence and risk factors of LBP in general, but there is a lack of information about this problem in Arab, Islamic cultures. This lack of data in Arab, Islamic cultures led the researcher to investigate the prevalence of LBP and factors influencing provision of physiotherapy for patients with NSLBP in one specific example of Arab, Islamic culture. The methodology and results of this investigation set in the Gaza Strip can be found in Chapters 3 to 7.

This chapter aims to define the population of LBP patients and to describe definitions related to this particular study and their implications for clinical practice and research, focussing on the NSLBP group from the total LBP population. It discusses the definitions of LBP and their implications for diagnosis and treatment of the condition. It also discusses the literature of patient experiences of LBP disorder and the influence of culture and associated psychosocial problems on interpretations of pain
and the influence of pain interpretations on the progress of NSLBP symptoms. Possible causes of LBP and its management are also discussed in this chapter.

1.2 Definitions of low back pain

For the purpose of this thesis LBP will be defined as pain, muscle tension or stiffness of the lower back, below the costal margin and above the inferior gluteal folds, with or without leg pain (sciatica) (Waddell, 1998; Deyo and Weinstein 2001). It is a symptom associated with various pathologies, aetiologies, diagnoses and medical management techniques (Waddell, 1998; Linton, 2000). A variety of terms can be used to describe LBP, such as, NSLBP, lumbago, idiopathic LBP and mechanical LBP. The use of these terms can cause confusion as they all refer to the same condition. The term “low back pain” also is confusing as it only describes one aspect of the disorder and creates the assumption that the condition is characterised only by pain. Despite the issues related to the definitions of LBP, the definition at the beginning of this paragraph is in common usage and will be used throughout this thesis.

As mentioned in the Preface, LBP has been classified into two categories; specific and non-specific. Specific low back pain refers to symptoms caused by a particular pathophysiological mechanism. A specific aetiological diagnosis, linked to infection, inflammation, osteoporosis, rheumatoid arthritis, fracture or tumour can be made for this group of patients. Deyo et al., (1992) reported that of all LBP patients surveyed in primary health care settings in the USA, 4% had a compression fracture, 3% spondylolisthesis, 0.7% a tumour or metastasis, 0.3% spondylitis and 0.01% an infection. This supported the findings of an earlier study with 900 subjects by Waddell in 1982. Although different research designs were used, both studies demonstrated rigorous research methodology. Moreover, in their review of the evidence base, Bogduk (1999) and Bogduk and Govind (1999) supported the findings of these studies. In the absence of a structural or pathological diagnosis, the remaining 90% of patients with LBP are labelled with non-specific or mechanical LBP. According to Spitzer et al. (1987) and Lin et al., (2006), uncertainty seems to be the
rule when it comes to the underlying causes of NSLBP as symptoms cannot be linked to a clear specific cause.

The categorisation of LBP into specific and non-specific provides physicians with criteria based on the presence or absence of pathology to classify patients with LBP into two groups. The group with pathological changes may require further medical investigations and treatment, while patients with NSLBP can be referred to physiotherapy or other conservative treatment.

1.3 Non-specific low back pain

The definition of NSLBP proposed by Deyo and Weinstein (2001) is used throughout this thesis. This pain is generally accompanied by painful limitation of motion, is affected by physical activities and posture, and can be associated with referred pain without identifiable pathological changes. As with definitions of LBP, this definition is not ideal, but is in common usage.

Dysfunction such as joint stiffness, reduced muscle strength and limited, or lack of mobility is poorly correlated with NSLBP (Deyo, 1988; Andersson, 1997). Associations between abnormalities on X-ray and magnetic resonance imaging (MRI) and NSLBP are considered to be weak (Jensen et al., 1994a; van Tulder et al., 1997). There is strong evidence indicating that psychosocial factors play an important role in recurrent and chronic NSLBP (Waddell, 1987; Severeijns et al., 2001; Peters et al., 2005).

A comprehensive description of NSLBP and its impact on the individual can be evaluated within the framework of the WHO International Classification of Functioning, Disability and Health (ICF, 2004). Non-specific low back pain does not induce structural changes by definition, but can cause loss of health status in the form of symptoms and loss of function, limitation of activities and restricted participation. Loss of function relates to pain in the back and associated distress and behavioural problems. Limited activities include those of daily living and leisure activities. There may be temporary or permanent work disability, chronic pain behaviour and demand
for care from others. Fear of the recurrence of back pain may also limit activities and restrict participation.

In clinical practice, NSLBP may be classified according to the persistence of symptoms (Frymoyer, 1988; Waddell, 2004). There is more than one timeline for this, but that described by Bogduk (2000) is the one accepted in this thesis because of the importance of duration as a variable in the progress of NSLBP symptoms. In this classification, NSLBP is deemed to be acute when it persists for less than six weeks, considered as sub acute between six weeks and three months and chronic when it lasts for longer than three months (Bogduk, 2000). There is considerable evidence that psychosocial factors play an important role in recurrent and chronic NSLBP (Waddell, 1987; Severeijns et al., 2001; Peters et al., 2005). This evidence comes from randomised controlled trials and systematic reviews (Linton, 2000; 2001). Although these studies did not provide details about the psychosocial factors included, the consistency of results suggests that psychosocial factors contribute to the progress of NSLBP symptoms.

Empirical studies suggest that recurrences will occur more frequently and be more severe if patients have had frequent or long-lasting NSLBP complaints in the past (Koes et al., 2001). Von Korff and Saunders (1996) investigated the course of back pain in primary care. They suggested that the traditional view of NSLBP consisting of single episodes of acute and chronic NSLBP is inadequate because symptoms of NSLBP change. They consider that NSLBP has a recurrent course characterised by variation and change, rather than an acute, self-limiting course, and the findings of Croft et al., (1997) who reviewed the literature of LBP supported this as they found that the symptoms of NSLBP can fluctuate. It is possible that, in common with other conditions, NSLBP has periods of remissions and exacerbations. The variation in the occurrence of NSLBP can make it difficult to distinguish between acute and chronic NSLBP (Croft et al., 1997). Studies in the UK identified NSLBP as the most common cause of disability in young adults (Croft et al., 1994): the survey implicated NSLBP in more than 100 million work days lost per year.

Non-specific low back pain is thus a major problem for diagnosis, treatment and research. The literature shows that some authors have attempted to classify NSLBP
into groups aiming for facilitation of its diagnosis and treatment. Nachemson and Andersson (1982) presented a scheme directed at screening purposes, and taking into account the duration of symptoms as well as the type of onset and the patient’s own description of his/her pain problem. This scheme focuses on the physical dimension and subjective description of pain. In the light of recent research, where the psychosocial dimension seems to play an important role in the progress of NSLBP symptoms, this scheme seems inappropriate for research and physiotherapy practice.

The Quebec Task Force proposed a classification of Activity-related Spinal Disorders (Spitzer et al., 1987), based on the duration of symptoms, location of pain, work status and patient’s medical history. Such a classification does not require a definite pathophysiological aetiology, but addresses the most important elements of the problem rather than the disease itself. Table 1.1 shows the eleven categories of the Quebec Task Force Classification.

Diagnostic terms and standardized classifications are needed for communication purposes both among health care providers and between health care providers and patients. Although the Quebec Task Force Classification was published in 1987, it still can be used easily for physiotherapy research purposes and clinical management of NSLBP as it includes 11 features describing the clinical entities encountered in practice rather than pathological ones (Spitzer et al., 1987). Currently, despite various proposals mentioned, there is no reliable or valid classification system for NSLBP (Vet et al., 2002; Kent et al., 2009).

Since specific low back pain can be diagnosed by its pathology, it could be argued that it should not be used as a diagnosis but a disease and that the term “low back pain” should only be used to refer to non-specific low back pain, but in practice, both terms are used interchangeably. This study focuses on non-specific low back pain, based on the definition of Deyo and Weinstein (2001) because this definition is specific for NSLBP patients who commonly seek physiotherapy.

When collecting data, the general term "low back pain" was used in interviewing the general population (study 1 in chapter 4) and patients (study 4 in chapter 7) because of the researcher’s assumption of lack of understanding of the term NSLBP amongst
lay people. The term "non-specific low back pain" was used in investigating physiotherapists' opinions about the management of NSLBP (study 2, in chapter 5 and study 3 in chapter 6).
<table>
<thead>
<tr>
<th>Classification</th>
<th>Symptoms</th>
<th>Duration of symptoms from</th>
<th>Working status at time of</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pain without radiation</td>
<td>Acute (&lt;7 days)</td>
<td>Working</td>
</tr>
<tr>
<td>2</td>
<td>Pain + radiation to extremity, proximally</td>
<td>Sub acute (7 days – 7 weeks)</td>
<td>Idle (absence from work, unemployed Or inactive)</td>
</tr>
<tr>
<td>3</td>
<td>Pain + radiation to extremity, distally</td>
<td>Chronic (&gt;7 weeks)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pain + radiation to upper/lower limb / neurological signs</td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td>Presumptive compression of spinal nerve root on a spinal roentgenogram</td>
<td></td>
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</tr>
<tr>
<td>6</td>
<td>Compression of spinal nerve root confirmed by specific imaging techniques, magnetic resonance imaging or other</td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td>Spinal stenosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Post-surgical status, 1-6 months after intervention</td>
<td></td>
<td></td>
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<tr>
<td>9</td>
<td>Post-surgical status, &gt;6 months after intervention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Chronic pain syndrome</td>
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<td>11</td>
<td>Other diagnosis</td>
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Table 1.1: Quebec Task Force Classification of activity-related spinal disorders (Spitzer et al., 1987)
1.3.1 Acute non-specific low back pain

Acute NSLBP is that which persists for up to 6 weeks and is characterised by a combination of tissue damage, pain and anxiety (Waddell, 2004). The degree of anxiety is considered to be influenced by personality and previous experience of injury (Melzack and Wall, 1996). It is a common complaint and has a good prognosis, as most NSLBP episodes tend to improve over the first month after advice and treatment (Von Korff and Saunders, 1996). The 6 week period of time was based on epidemiological evidence that indicated a worsening prognosis if a patient remained off sick at 7 weeks (Spitzer et al., 1987). For the purpose of this study, the term acute NSLBP refers directly to a 6 week time frame and it does not indicate sickness status.

1.3.2 Chronic non-specific low back pain

Chronic NSLBP pain is the greatest challenge to health care providers. It has been described as persistent or intermittent pain that lasts for more than three months (Fordham, 1992; Carey et al., 2000; Koes et al., 2001). Melzack and Wall (1996) defined it as pain that begins as acute pain and lasts after healing has taken place; it often becomes a pain syndrome and a medical problem in its own right. This is the definition used in this thesis. Chronic pain may not appear to show any clearly identifiable cause but can be a result of multiple interacting causes (Melzack and Wall, 1996), nor is it clear how the process of pain perception alters from acute to the chronic stage (Linton and Hallden, 1998; Waddell, 2004).

Waddell (1998) pointed out that although the usual definition of chronic NSLBP is pain that has continued for 3 months, 6-10% of adults may have persistent or recurrent pain (which fulfils that criterion) but they manage their pain, have little disability, deal with their symptoms and do not seek health care. The real problem is the small group of adults with chronic, intractable, NSLBP and disability who use 80% of all health care costs but fail to gain lasting relief (Andersson, 1999; Waddell, 2004).
Vischer et al., (1996) investigated the features of chronic NSLBP used by a group of rheumatologists and chiropractors from 12 practices in Geneva by means of semi-structured interviews. Participants described chronic NSLBP as; persistent pain, specific psychological difficulties, clear physical or mechanical signs and symptoms, a long course of treatment, difficult working conditions and tension and conflicts in the patient’s everyday life. These descriptions go beyond issues of diagnosis and duration of symptoms and include some of the risk factors described in the literature. However, it must be questioned if these results are applicable in cultural contexts outside Switzerland. Waddell (1998) described the features of chronic NSLBP as: persistent pain which may be out of all proportion to physical damage; progressive inactivity and disability; disturbed mood; unhelpful beliefs; increasing requests for medical help; treatment failure and side effects; additional social and family stress; anger and hostility. His descriptions were based on epidemiological studies from western societies by Von Korff et al., (1988), Mason (1994) and others. Both Vischer et al (1996) and Waddell (1998) highlight the association between chronic NSLBP and psychosocial participation.

From the multi-factorial viewpoint outlined in the previous paragraph, chronic pain conditions may be considered to be due to a dysfunctional nociceptive system (Adams et al., 2002). Waddell’s (1998) picture of chronic NSLBP, with persistent pain out of all proportion to physical findings, is consistent with the complex nature of the relationship between the peripheral and central nervous system. Whatever the reason for the existence of chronic pain, whilst acute pain may promote survival by its warning mechanisms, chronic pain is usually thought to be destructive physically, psychologically and socially (Main and Spanswick, 2000).

Emotional and behavioural disturbances may result in the patient feeling victimized, desperately seeking someone who can solve his/her problem (Craig, 1994). In such pain, where psychological factors appear to play a predominant role, the pain is labelled as “psychogenic”. Individuals with this pain may be presumed to be in pain because they need or want it, but a theory proposed by Melzack and Wall (1996) considers chronic pain to be the cause, rather than the result of neurotic symptoms. In the case of LBP, chronic pain refers to a set of symptoms rather than a diagnosis as usually defined. It is possible that the label “chronic non-specific low back pain”
(CNSLBP) has become a diagnosis of convenience for many people who may actually be disabled due to socioeconomic, work-related or psychological reasons. Therefore, the need for profiling groups of chronic NSLBP seems obvious both for research purposes and physiotherapy practice.

As Von Korff and Dworkin (1989) noted, "...in the absence of classification criteria, there is ambiguity in how to differentiate the normal and commonplace experience of recurrent pain from a persistent pain problem characterized by suffering and dysfunction". The ambiguity in pain definitions and duration in NSLBP may lead to confusion in physiotherapeutic assessment and treatment. The perception of pain and associated disability and their role in the development and management of NSLBP are discussed in the following sections.

1.4 Patient experiences of non-specific low back pain

In western society, patients with NSLBP may embark on a long journey seeking appropriate medical attention and a final diagnosis. While seeking treatment for their pain, they come into contact with various healthcare providers whose beliefs appear to play a role in the patient's response to his/her condition. This influence often contributes to NSLBP sufferers' lack of understanding of what has happened to them and feeling that their pain is taking over (Walker et al., 1999; 2006). This evidence highlighted the importance of the cultural and psychosocial factors in the production and maintenance of NSLBP disability (Waddell, 1996; Linton, 2000; Peters et al., 2005).

In Arabic societies, there has been no research into the patient experience of NSLBP, but subjectively it would appear that such patients put their faith in God's intervention, rather than considering the cause and effects of disease, and this attitude influences patients' pain experience and behaviour. As such societies still live in extended family neighbourhoods; patients may receive advice about their condition from family members or neighbours, who also approach LBP from a religious perspective. Part of the research reported in this thesis sought to investigate the experience of patients with NSLBP in the Gaza Strip with a view to understanding
whether there were factors specific for an Arabic population previously unreported in
other populations that should be taken into account by health practitioners.

1.5 Management of non-specific low back pain

Because NSLBP is associated with enormous psychological, social and economic
costs, there is no agreement on the most effective way to manage it. Although
findings from randomized controlled trials provide little convincing evidence to
inform approaches to NSLBP management they generally support active interventions
rather than no treatment (van Tulder et al., 2000; Assendelft et al., 2003; Cherkin et
al., 2003; UK BEAM, 2004; Hay et al., 2005). Health care providers involved in the
treatment of NSLBP face a significant challenge, namely that the cause of the pain
often cannot be determined (Bogduk, 2000). Historically, treatment of LBP was either
surgical or non-surgical intervention, with surgery restricted to those cases where
there is an identifiable lesion and NSLBP treated by conservative interventions.

As stated earlier in this chapter, there is an increasing body of evidence showing that
psychosocial factors play an important role in chronic NSLBP (Waddell, 1987; Peters
et al., 2005). In this light, it is important to look at models of management of NSLBP
that take into account psychosocial factors. The traditional biomedical model of
management is based upon the notion that pain and disability are a consequence of
physical pathology and diagnosis of physical pathology provides the basis for
physical treatment of the illness. Physiotherapists following this model will very
likely adapt their treatment to the pain level of the patient aiming to treat the physical
impairment. This model of management has thus far failed to cure or to prevent the
development of NSLBP.

The general acceptance of a biopsychosocial model is reflected in the literature, for
example, by the inclusion of presentations on psychosocial issues as well as basic
science, diagnostic, surgical, and non-operative care in journals and conference
proceedings (Gatchel and Bell, 2000). In this context, Ursin (1997) suggested that
NSLBP should be regarded as a subjective health complaint rather than a medical
problem. However, despite the research interest in biopsychosocial approaches to NSLBP, the biomedical model is still prevalent in clinical practice.

The term “biopsychosocial” refers to the contribution of biological, psychological and social elements to the development and management of NSLBP disorder. Although it is probable that NSLBP is a physical problem that arises from musculoskeletal and neurophysiological processes, psychosocial elements are considered to have a fundamental role in its development and management. Recent studies have looked at the influence of behavioural change and psychological disturbances, such as, personality, distress, anxiety, fear and uncertainty, depression and anger, on the progress of symptoms of NSLBP. These studies indicate that psychological factors influence patients’ responses to conservative or surgical treatment and Polatin et al., (1993) suggest that 30-50% of chronic pain patients have some kind of personality disorder. Croft et al., (1995) found that 15-30% of adults with low back pain may have some degree of distress, sufficient to influence their perception of pain and their decision to seek healthcare.

In the absence of confirmatory diagnosis and effective treatment, NSLBP can be frightening and there is increasing evidence for the role of fear of movement in the transition from acute to chronic NSLBP (Buer and Linton, 2002; Linton, 2002). Many authors suggest that chronic NSLBP is related to high levels of anxiety, depression, social and occupational dysfunction (Romano and Turner, 1985; Sullivan and Loeser, 1992; Turk and Okifuji, 1996; Crombez et al., 1999; Raak and Wabren, 2006).

Researchers have investigated the impact of social environment on the course of symptoms and prognosis of NSLBP. Guzman et al., (2001a) reported that management consisting of some physical treatment, in addition to psychological, occupational or social measures, reduced pain and improved function in patients with NSLBP. Changing the beliefs of patients about the consequences of pain and participation in management is said to improve clinical outcomes (Hadler, 1999; Ehrlich, 2003).

Furthermore, Hadler (1999) and Ehrlich (2003) reported that coping inadequacies can be partially conditioned by previous beliefs, exacerbated by hostile environmental
factors and aggravated by legal and compensation issues. These findings support the idea that provision of positive messages improves beliefs about NSLBP and appears to reduce disability and compensation costs (Buchbinder et al., 2001; Frost et al., 2004). These studies emphasise the need to investigate the management of NSLBP in different societies and different cultural backgrounds and indicates the need for research, such as is reported in this thesis.

In most cases of NSLBP, a definitive diagnosis is not possible (Spitzer et al., 1987; Deyo, 1993). These uncertainties have led researchers to conclude that the majority of patients with NSLBP do not have identifiable patho-anatomy to explain their pain (Spengler and David, 1985; Deyo and Phillips, 1996; Adams et al., 2002). Failure to reach consensus regarding the cause and nature of pain can lead to inconsistencies in the advice and subsequent treatment that is given to patients with NSLBP. In the absence of clarity regarding the cause of NSLBP; it is likely that healthcare providers make management decisions based on historically popular treatment protocols, or patient preferences and only rarely on evidence-based guidelines. This review of current literature indicates the lack of a firm scientific evidence base underpinning the development of different techniques of management of NSLBP. Consequently there is a need for a review of management techniques and strategies in order to obtain clear indicators of efficacy and research priorities in this area. The following sections discuss the theoretical and clinical basis for perception of pain and associated disability in patients with NSLBP.

1.6 The perception of pain

According to Main and Spanswick (2000), psychosocial factors can have wide-ranging effects on the perception of pain. These factors have been used by Waddell (2004) to explain the variation in pain behaviours observed in NSLBP. Several studies observed that psychosocial aspects of pain behaviour occur in patients with acute and chronic NSLBP (Kleenerman et al., 1995; Linton, 2001, 2002; Goubert et al., 2003). Scientific evidence from Linton and Hallden (1998), based on screening psychosocial risk factors associated with future sick absenteeism in patients with acute and sub-
acute LBP suggested that cognitive and affective factors can predict future chronicity in acute NSLBP.

In other experimental work, Linton et al., (1999) studied a prospective cohort population of asymptomatic subjects. They found that subjects who scored above the median score on a modified version of the Fear Avoidance Beliefs Questionnaire (Waddell et al., 1993) had twice as much chance of having a pain episode the following year, compared to those who had lower scores. The Fear Avoidance Beliefs Questionnaire is a well-validated instrument (Waddell et al., 1993) and Linton et al., (1999) included a large sample from the general population. These findings were supported by the results of Klenerman et al. (1995), despite different data collection methods used in the two investigations. Both studies suggest that cognitive and affective factors may produce a predisposition to the perception of pain or the development of chronicity. The evidence suggests that these processes, irrespective of the original pathology and length of time of pain perception, are determining factors in the development of chronic NSLBP. Such patients are likely, not only to be disabled by their pain, but may also demonstrate heightened awareness such as anxiety, fear and depression or anger (Main and Watson, 1999; Linton, 2000).

The literature also reveals that cross-cultural differences are evident in many aspects of human behaviour, particularly prevalence of illness and health care usage. With regard to NSLBP, Volinn (1997) reported differing prevalence rates in different western countries. Additionally, differences between cultural groups have been shown in seeking treatment for NSLBP (Anderson, 1984; Sanders et al., 1992; Honeyman and Jacobs, 1996). Most of these studies were set in western cultures and there is no evidence that these studies involved populations from the Middle East or groups holding beliefs from Arabic cultures or Islam religion.

1.7 Disability associated with non-specific low back pain

Disability may be associated with NSLBP and has been defined variously. Kelsey (1980) described it as diminished capacity for everyday activities and gainful employment. The WHO (1980) and Waddell (1998) defined disability as any
restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range limitation of a patient’s performance compared to a fit person of the same age and sex considered normal for a human being. Andersson (1998) suggested that disability is the limitation of a patient’s performance compared to a fit person of the same age and sex. Impairment was defined as “loss or abnormality of anatomic, physiologic or psychological structure or function” by WHO (1980).

In 2000, the International Classification of Functioning, Disability and Health (ICF-DH) changed the emphasis from impairment and disability to activity and activity limitation (WHO, 2000). In the ICF-DH, activity is defined as something a person does, ranging from very basic to complex, and activity limitation as a difficulty in the performance, accomplishment or completion of an activity. Other definitions of disability are designed for the purpose of compensation and are mainly about capacity for work. The American Medical Association (AMA) (2000) described disability as an alteration of an individual’s capacity to meet personal, social or occupational demands because of impairment. In their assessment, health professionals must make a clear distinction between impairment and patient’s report of pain and disability. For the purpose of this study, disability refers to any limitation of activity of a patient's performance due to NSLBP problem.

Disability associated with NSLBP is a burden on the individual, family, health service and society. Identification of factors associated with disability in NSLBP has recently received increased research attention and Peters et al., (2005) found that pain intensity is the strongest predictor of disability. Although, there is some controversy in the literature concerning the relationship between pain intensity and disability in NSLBP (Vlaeyen et al., 1995; Waddell, 2004), due to the different definitions given to pain and disability and the influence of pain on the development of disability, it appears that physiotherapists’ management of pain may influence the progress of disability (Moffett and Mannion, 2005). In the current study, the associated disability with LBP and the factors influencing its progress were investigated.

It can be concluded that pain and disability are linked, but the relationship is subtle and complex and influenced by many factors. Chronic NSLBP is not the same as
chronic pain-related disability. Understanding the influences that link NSLBP and disability can improve understanding of the clinical problem and its management. This link will be discussed in relation to patient findings from Gaza. The following sections discuss the factors influencing pain perception and development of disability associated with NSLBP.

1.8 The influence of psychosocial factors on non-specific low back pain

Prospective studies have identified associations between psychological factors and social factors and NSLBP (Linton, 2000; Waddell and Waddell, 2000). These associations may be considered to influence the whole experience of individuals. Research has indicated that psychosocial influences on acute NSLBP are of minor importance but play a major role in chronic NSLBP (Truchon and Fillion, 2000). In an exhaustive review of the literature, Linton (2000) concluded that psychosocial variables generally have more impact than biomedical or biomechanical factors on back pain disability. Among psychological factors, anxiety and depression are the best identified (Polatin et al., 1993; Kessler, et al., 1996; Schermelleh-Engel et al., 1997; Epping-Jordan, et al., 1998; Fisher and Johnston, 1998; Clauw et al., 1999; Pincus et al., 2002). A major limitation of these studies is their combination of psychological and social factors together without discriminating between the two factor groups. Despite these limitations, findings of these studies should not be ignored, as often there is interaction between psychological and social factors.

Cognitive factors, such as fear-avoidance beliefs and passive coping have been found to be associated with pain and disability (Linton, 2000). Self-reported feelings of disability and negative beliefs about pain such as kinesiophobia and fear avoidance are related to the evolution of chronic LBP (Gatchel et al., 1995; Fritz et al., 200; George et al., 2003). Catastrophizing and distraction have been linked with pain intensity, disability and poor emotional state in chronic NSLBP patients, whereas cognitive reconstruction and pain control are considered to be associated with positive evolution of chronic NSLBP (Tuttle et al., 1991; Dozoiz et al., 1996; Kroner-Herwing
et al., 1996; Lin and Ward, 1996; Robinson et al., 1997; Haythornthwaite et al., 1998; Riley et al., 1999; Lewandowski, 2004).

Some authors emphasise sociological factors, suggesting that job dissatisfaction; low income and lack of leisure are associated with high levels of chronic NSLBP (Pope, 1989; Symonds et al., 1996; Marras, 2000). However, most of these studies are retrospective and/or cross-sectional, which does not allow precise analysis of which psychodynamic processes occur when LBP becomes chronic. Retrospective questioning of people who have experienced long term pain does not always provide reliable information about their psychological state before the onset of pain due to memory lapses (Koleck et al., 2006).

Prospective studies have suggested that catastrophizing and fear avoidance are powerful predictors of pain and disability (Hasenbring et al., 1994; Burton et al., 1995; Klennerman et al., 1995; Linton and Hallden, 1998; Picavet and Schouten, 2003). Passive coping (Potter and Jones, 1992) and poor self-perceptions about the future development of NSLBP and disability (Hazard et al., 1996; Linton and Hallden, 1998) were also considered to be predictors of disability at a one-year outcome in patients with NSLBP.

Despite the numerous data obtained about psychosocial factors influencing the onset and the progress of symptoms of NSLBP syndrome, it is difficult to understand how these variables interact with each other. Most studies consider either pain or functional criteria for measuring associations of risk factors of NSLBP. Pain criteria address chronic pain, recurrent pain and onset of new episodes and functional criteria address disability and return to work. The quality of life and relationships between functional and emotional factors are less documented (Koleck et al., 2006). Research is needed to clarify the role of psychosocial factors in the chronic evolution of functional and emotional variables.

Exploring the influence of psychological and social factors on the progress of NSLBP seems to be important for physiotherapists and should be taken into account in the management of the condition. This study aims to investigate these factors in the Gaza Strip and their possible influence on patient management.
1.9 Cultural influences on non-specific low back pain

Culture can be defined as the individual's sense of ethnicity, religion, historical roots and general value systems (Main and Spanswick, 2000). It is generally accepted that LBP is common in populations throughout the world, but interpretations of the experience of LBP and associated pain behaviours seem to differ significantly, depending on cultural norms. Sanders et al. (1992) investigated cultural influences on LBP patients in different countries such as USA, Japan, Mexico, Columbia, Italy and New Zealand. They found differences in Sickness Impact Profile (SIP) scores of patients seeking help for LBP at pain clinics. They also found psychosocial and vocational impact of LBP to be greatest in Americans, then New Zealanders and Italians. Unfortunately, this study did not investigate possible explanations for these differences, such as differences in work situations, social support, economic factors, sickness entitlement or psychological factors such as beliefs and coping strategies.

Studies comparing patients from the USA and other parts of the world have concluded that American NSLBP patients use more medication, experience greater emotional and behavioural disruption and has suggested that ethnic background affects the expression of pain (Zborowski 1952; Carron et al., 1985; Brenan et al., 1990; Sanders et al., 1992). These studies illustrate that it is important for health care providers to consider cultural differences among individuals when reporting pain. Culture influences the distinctive features of human lifestyles and as such shapes psychological experience and social behaviour (Fabrega and Tyma, 1976). However, cultures are constantly changing and adapting and the differences in cultural attitudes reported previously may not be evident today.

In conclusion, it has been argued that different cultural groups perceive and respond to pain in different ways, and that there is cultural variation in attitudes, expectations of treatment and the meaning of pain. Culture is considered to influence how people express pain and emotions, their pain behaviour and how they communicate their pain to others, including health care providers. The current study investigates cultural influences on NSLBP and its management in an Arab, Islamic society with emphasis
on a group of patients with NSLBP. Part of the research reported in this thesis investigated pain perception by two focus groups of patients with NSLBP.

1.10 Beliefs about non-specific low back pain

Pain beliefs can be defined in terms of a patient's own ideas about the nature and meaning of pain and psychological studies have suggested that pain beliefs are made up of four general components (DeGood and Tait, 2001). Beliefs are held about the nature of the illness and the symptoms regarded as part of the illness; about the future course and duration of the illness; about the expected effects of the illness and their impact on the individual's life, and about how to deal with the illness including personal responsibilities and expectations of health care. Due to their impact on a patient's progress, these beliefs provide a framework for health care providers to consider when planning treatment programmes. It would seem important that physiotherapists take these beliefs into account in their management of patients with NSLBP.

For patients with NSLBP, most general beliefs are basic assumptions about the relationship between pain and disability and work. Waddell (1998) considers that these beliefs are highly personal and strongly rooted in a particular culture. Waddell has suggested that fear of pain may lead to either confrontation or avoidance of normal activities, or a mixture of the two. Although most guidelines for LBP recommend physical activity as a means of recovery and prevention of further pain, it is clear that fear and expectation of aggravating pain may lead patients to avoidance of activity and passivity during an episode of NSLBP (Koes, et al., 2001). The evidence that patients may not follow treatment advice because of miscounted beliefs is important and so part of the research reported in this thesis investigating whether this was an issue in the Gaza Strip.

Research has indicated that health professionals' beliefs of the patient's pain experience may be different to those held by patients (Marquie et al., 2003; Perreault and Dionne, 2005). This gap between beliefs held by patients and health care providers may reflect poor levels of communication between them. This limited
communication has been suggested to contribute to inconsistent and conflicting advice given to patients, which may subsequently contribute to the development of chronicity (Kim et al., 1999). Findings from randomised controlled trials (Frost et al., 2004) have supported this evidence highlighting the importance of advice in the management of NSLBP.

Generally, information given by health care providers to patients in a one-on-one setting is considered to have a strong impact on patients' beliefs about their complaint (Lemkau and Grady, 1998; Tauras and Liang, 2003; Teutsch, 2003). The research reported in this thesis investigated the beliefs and attitudes of physiotherapists about NSLBP and their influence on the management of patients with NSLBP in the Gaza Strip.

The literature suggests that an individual's previous experiences with NSLBP influence the outcome of new episodes of pain (Thomas et al., 1999) and sick leave (Muller et al., 1999), but it is not clear how these experiences influence beliefs and perceptions about LBP. Pain beliefs range from the very general to the highly specific, from broad philosophical perspectives about the meaning of life to very specific beliefs about the nature of NSLBP and its management.

Patients seek information from health professionals and health professionals consider giving explanations to patients as part of the therapeutic process. Donovan et al., (1989) have suggested that it is important not to deal with patients as if they were "blank sheets"; they bring their own theories and experiences of health and illness to the therapeutic encounter. Negotiation is required that may need to take into account different systems of thinking (Helman, 1985; Burton, 2005). Health professionals rely on knowledge gained from their education and professional socialisation (Ferreira et al., 2004), as well as practical knowledge and experience to help them understand and explain concepts to their patients (Moscvici, 1984; Ferreira et al., 2004). In giving explanations, health care providers need to explain scientific concepts in lay terminology to overcome the gap between scientific language and patients' experience. It would seem important that physiotherapists take into account patients' views and experiences of their back problems as this may help in finding a shared language and common ground for both participants, increasing both parties'
satisfaction with the therapeutic relationship. Problems within this relationship may in
turn complicate the achievement of successful outcomes, both from patient’ and
therapist’ point of view.

There is no evidence that pain beliefs and their implications for health care have been
studied in Arab, Islamic communities. Investigating pain beliefs of patients and
physiotherapists and the relationship between them in the Gaza Strip is part of the
research reported in this thesis and may provide new strategies for developing
physiotherapy practice in Arab, Islamic countries. The final sections of this chapter
discuss the arguments related to the causes and risk factors of NSLBP.

1.11 Causes of non-specific low back pain

The literature indicates that the aetiology of NSLBP is multifactorial including
physical causes such as trauma, disease and deformities and psychosocial factors. For
the purpose of this study, the aetiology of NSLBP will be discussed from biomedical
and psychosocial perspectives, focussing on conditions of LBP referred to
physiotherapy without identification of cause.

Research on biomechanics of back pain suggested that patients with NSLBP have
poorer position sense and asymmetries in muscle activities than asymptomatic
individuals (Adams et al., 2002). This may change the balance of lumbar and pelvic
movements or between flexion and extension and subsequently may result in poor
posture. According to Panjabi (1992), good posture and controlled trunk motion are
the result of coordinated load-sharing between the passive and active systems of the
musculoskeletal system and the stabilizing mechanisms of the trunk are controlled by
the neural system. A dysfunction of the musculoskeletal system can be considered to
lead to extra load-sharing of the passive system that can cause abnormal motion and
greater strains on certain structures, accompanied by increased pain and discomfort
(Quint et al., 1998). Experimental studies on the functional pathology of the
neuromuscular system indicate that changes in muscular function play an important
role in the pathogenesis of many painful conditions of the musculoskeletal system and
constitute an integral part of postural defects in general (Bogduk, 2000; Adams et al.,
The above mentioned findings highlight the interaction between pain and changes that may take place in the structure of the back during the course of back pain. They also highlight the influence of pain on back functions.

Beliefs about NSLBP differ between individuals with NSLBP and healthcare professionals (Cedraschi et al., 1992; Skelton et al., 1995; Hermoni et al., 2000). This mismatch of beliefs may result in patients' acquisition of attitudes and behaviour that are considered maladaptive by health professionals (Geisser and Roth, 1998), and increase the utilisation of primary care services. These views have been supported by Koes et al., (2006) who suggested that patients who believed in the importance of exercise utilized physiotherapy more often than those who did not believe in the value of exercise. It has also been suggested that physiotherapists' beliefs about the importance or lack of importance of psychosocial influences in the progress of NSLBP influence their approach to treatment (Pincus et al., 2007).

Research on the contribution of psychosocial factors to chronic disability in back pain suggests that chronic disability is primarily related to psychosocial dysfunction (Rainville et al., 2000; Linton, 2002; Ostelo et al., 2003) demonstrated by over or under treating, failing to use effective pain control or re-activation strategies, reinforcing patients' unhelpful illness perceptions by advising increased spinal vigilance and restricting normal activities. Because the validity and reliability of some of the existing data about the causes and interaction of factors in the history of NSLBP is limited, caution should be exerted in accepting these results because of the poor research methods used in these studies. Nevertheless, as many health professionals consider psychosocial influences to be important in NSLBP, the research in this thesis will consider these influences in the Gaza Strip.

1.12 Predisposing factors of non-specific low back pain

Postural stress and faulty movement patterns of the back have been considered to be the main predisposing factors of NSLBP (Adams et al., 2002; Waddell, 2004). Correlational studies suggest a relationship between dysfunction and lack of muscular stabilisation in patients with NSLBP (Pheasant, 1991; Griegel-Morris et al., 1992;
Adams, 1996; Mottram, 1997; Kember, 1998). Many researchers would say that correlational studies are not as robust as experimental and the results from these studies must be viewed with caution. However, Twomey and Taylor (2000) and Slade and Keating, (2007) suggested that poor posture can be a prelude to NSLBP, arguing that poor posture and habitual movements can play a major role in the development of dysfunction and Sahrmann (1993) postulated that faulty movements can lead to pathology, not just a result of it. Other experimental studies have suggested that physical stress resulting from both force and vibration experienced in heavy manual occupations can lead to mechanical fatigue which can affect the axial loading of the lumbar discs (Anderson, 1987; Klaber Moffett et al., 1995; Slade and Keating, 2007).

Prolonged inactivity is considered another pre-disposing factor as it can lead to muscle atrophy, loss of muscle strength and adaptive shortening of soft tissues. As a result of this, disuse and loss of mobility can lead to poor muscle tone, lack of aerobic fitness and poor posture (Salter et al., 1975; Williams and Sperryn, 1979; Taylor and Twomey, 1994; Goubert et al., 2003).

The literature highlights the factors mentioned above as indirect possible causes of NSLBP without indicating how they relate to each other. Despite limited data, there are theoretical considerations that physiotherapists should consider in their assessments and treatment of patients with NSLBP.

### 1.13 Precipitating causes of non-specific low back pain

Precipitating causes have been considered as the direct factors which can provoke pain in the lower back. Bullock and Bullock-Saxton (1994) summarised these factors as abnormal stress on a normal back, normal stress on an abnormal back and normal stress on an unprepared normal back. In the light of this, misuse, overuse, abuse or trauma can be direct causes of NSLBP in some cases. Assessing these factors in patients with NSLBP may help physiotherapists to provide better feedback to patients about their prognosis which may lead to speedy recovery as recommended by Frost et al., (2004).
1.14 Risk factors for non-specific low back pain

There seems to be no clear picture in the literature concerning key risk factors for NSLBP. Many epidemiological studies have been conducted to evaluate the association between risk factors and the occurrence of NSLBP. Among these studies, workplace settings (NIOSH, 1997) leisure settings (Hoogendoorn et al., 1999) and psychosocial issues (Linton, 2000) have been highlighted as important. However, the results from these studies must be viewed with caution, as they fail to consider factors such as age, level of physical fitness and strength, gender, height and body mass index.

Some systematic reviews have found that smoking can be considered a weak risk indicator of NSLBP (Leboeuf-Yde, 1999, 2000a) and that alcohol consumption (Leboeuf-Yde, 2000b), standing or walking, sitting, sports and total leisure-time physical activities (Hoogendorn et al., 1999) do not seem to be associated with NSLBP. Broadly speaking, variables associated with NSLBP are classified as individual, psychosocial or occupational factors (Waddell, 2004).

In a study with 33 patients with NSLBP, Vlaeyen et al., (1995) found that physical pathology was not predictive of disability, whereas pain-related fear was. Severeijns et al., (2001) studied a group of 211 patients with heterogenic pain complaints (54 whom had back pain). The contribution of catastrophizing and physical pathology to pain intensity, pain interference, life control and psychological distress was examined. Catastrophizing appeared to be the most potent predictor of each of the outcome variables but physical pathology did make a modest contribution to the explained variance in pain intensity and pain interference. These studies used different populations of NSLBP and used various different non-validated self-report questionnaires which may lead to differences in some of the results and conclusions. Many of the studies of risk factors were cross-sectional in design in which statistical association was only considered between possible risk factors and prevalence of reported symptoms.
Retrospective studies looked at small groups of workers and matched controls (Waddell et al., 2002). The groups were often highly selected and not typical of the general population. Many studies depended on self-reports of work and of symptoms which might be considered to cast doubts on the reliability of findings (Waddell 2004).

Although little is known about risk factors for the transition from acute to chronic NSLBP, there is evidence for risk factors of occurrence and chronicity of NSLBP. These are summarised in Table 1.2. In short, the epidemiological studies of risk factors of NSLBP reviewed in this chapter have many limitations. However, knowledge of risk factors may help to predict the development of future problems and also provide information about their aetiology and causal mechanisms. The research documented in this thesis aimed to provide basic information about the risk factors of LBP in the Gaza Strip.
Table 1.2: Possible risk factors for occurrence and chronicity of NSLBP (Koes et al., 2001)

<table>
<thead>
<tr>
<th>Individual factors</th>
<th>Occurrence</th>
<th>Chronicity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age</td>
<td>Obesity</td>
</tr>
<tr>
<td></td>
<td>Poor level of physical fitness</td>
<td>Low education level</td>
</tr>
<tr>
<td></td>
<td>Poor strength of back and abdominal muscles</td>
<td>High levels of pain and disability</td>
</tr>
<tr>
<td></td>
<td>Smoking</td>
<td></td>
</tr>
<tr>
<td>Psychosocial factors</td>
<td>Stress</td>
<td>Distress</td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>Depressive mood</td>
</tr>
<tr>
<td></td>
<td>Mood/emotions</td>
<td>Somatization</td>
</tr>
<tr>
<td></td>
<td>Cognitive functioning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pain behaviour</td>
<td></td>
</tr>
<tr>
<td>Occupational factors</td>
<td>Manual handling of materials</td>
<td>Job dissatisfaction</td>
</tr>
<tr>
<td></td>
<td>Bending and twisting</td>
<td>Heavy duties</td>
</tr>
<tr>
<td></td>
<td>Whole-body vibration</td>
<td>Job requirement of lifting for ¾ of the day</td>
</tr>
<tr>
<td></td>
<td>Job dissatisfaction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Monotonous tasks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Work relation/social support</td>
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<tr>
<td></td>
<td>Control</td>
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</tbody>
</table>

1.15 Conclusion

The condition of low back pain has been described in terms of definitions, causes and risk factors. Types of LBP have been discussed and the influence of psychosocial and cultural factors has been highlighted. In the next chapter, these issues will be discussed in the cultural context of the research study setting in the Gaza Strip.
Chapter Two

The Realities of Living in the Gaza Strip

2.1 Introduction

As discussed in the previous chapter, the literature on NSLBP has suggested that culture and social life play an important role in the way people react to and manage their symptoms (Honeyman and Jacobs, 1996; Volinn, 1997; Waddell, 2004). Epidemiological studies of LBP have reported differences in the prevalence of LBP in different countries (Sanders et al., 1992; Volinn, 1997), and it has been suggested that people with different cultural backgrounds vary in the way they perceive or respond to LBP symptoms and treatment (DeGood and Tait, 2001; Waddell, 2004).

This chapter reviews literature concerned with the influence of culture and social life on the development and management of LBP in western societies, and describes the cultural, religious and social aspects of life in the Gaza Strip that may influence the progress of LBP symptoms and management. It also presents the health care available for patients with LBP and the development of physiotherapy practice in Gaza. Due to the lack of published literature, information in this chapter is based on unpublished reports, personal communications and the researcher's experience, observation and knowledge about family and community structures, supported by external literature where it is available.

2.2 Literature review

Culture has been defined as “the collective attitudes, beliefs and behaviour that characterize a particular social group over time” (Waddell, 2004). Culture can be seen as the individual's sense of ethnicity, religion, historical roots and general value systems. It shapes similarities among individuals within a society and forms the basis for the development of stereotypes which maximise similarities and minimise
differences in groups. Culture shapes people's attitudes, beliefs and behaviour, and changes and adapts over time.

The common cultural parameters in the Gaza Strip are Arabic traditions and Islamic religious values. People in Gaza live in extended families and socialise in a mainly Islamic community (Farsoun 2004). Additionally, everyday life has been affected by long-term occupation and being victims of invasion and war. Within this context, health care delivery has been affected by the political changes and instability over the last 50 years.

It has been estimated that the annual prevalence of LBP in adults varies between 27% and 65% in different countries (Volinn, 1997), but epidemiological studies indicate differences in disabilities caused by LBP and use of health care by NSLBP sufferers in different cultures (Waddell, 2004). For example, Honeyman and Jacobs (1996) investigated back pain in Australian aboriginals, and found nearly one-third of the men and half of the women admitted to having long-term back pain. Whilst most epidemiological studies for the past 20 years show that this is a typical picture (Waddell, 2004; Krismer and van Tulder, 2007), the results of the study on aboriginals revealed a less usual response to the condition. In this case results indicated that back pain sufferers kept their pain private, not communicating it to others or seeking healthcare. The researchers postulated that this behaviour was due to cultural pressures about tolerating and not displaying pain, and resulted in untreated long-term back pain.

Cherkin et al., (1994) compared the rates of surgery for back pain in Canada with 13 other countries and indicated that in the USA, the rate was at least 40% higher than in all countries surveyed and more than five times higher than in Scotland and England. This again indicates a possible cultural difference in attitudes to seeking help for LBP.

As there are no data on the prevalence of LBP in Gaza and no research into the attitudes of the people about the condition, it is not possible to know if the situation is similar to that found in Australian aborigines or in the USA. Having this knowledge could be helpful in health care planning and so one of the objectives of this research
was to investigate the epidemiology of low back pain and its related risk factors in the Gaza Strip.

The most important consequence of LBP is its impact on people’s lives. It may affect general health and wellbeing, activities of daily living and work. An important risk factor that has been consistently found to be predictive of both LBP experience and disability, is the presence of misconceptions about LBP (Klenerman et al., 1995; Crombez et al., 1998; Linton and Hallden, 1998; Crombez et al., 1999; Linton, 2000; Buer and Linton, 2002; Picavet et al., 2002). There are indications in western cultures that negative beliefs about LBP are widespread in the general population and amongst health professionals and may be considered almost cultural (Eccleston et al., 1997). It has also been suggested that the variation in disability among patients with chronic LBP is influenced by attitudes and beliefs of both patients and healthcare providers about the relationship between pain and function (Rainville et al., 1995; Rainville et al., 2000).

Beliefs are considered to be the product of experience, learning and culture. Beliefs about LBP are said to focus on the pain, its course, its impact on life and how to get adequate help. In 1998, Deyo introduced the idea of myths about back pain into western societies. These myths relate to the belief that back pain is related to bodily injury (e.g., most back pain is believed to be caused by injuries or heavy lifting), and to unrealistic high expectations about diagnostic tests (e.g., patients think that X-ray and newer imaging tests can always identify the cause of pain) and treatment (e.g., it is thought that a slipped disc requires surgery). There is no evidence that such myths about LBP have been studied in the Middle East. One theory proposed by Al-Shahri (2002) argues that in an Arabic Islamic context, people have faith in God rather than cause and effect which may reduce the influence of myths in health care. To develop a greater understanding of the situation one of the aims of this research was to explore the attitudes and beliefs of physiotherapists about LBP and its management.

As mentioned previously, psychosocial and economic factors play an important role in the process of developing chronic pain and disability in patients with NSLBP. Psychological factors refer to beliefs and emotions of the individual, while social factors are the external relationships or interactions with other people, whether
individually, in a group, or collectively with society. Economic factors relate to health care resources available in society, the individual’s ability to access them and social security issues. In western societies, it has been recognised that compensation for work injuries has negative influences on LBP symptoms (Bergman et al., 2001; Waddell et al., 2002). It is interesting to investigate the problem of LBP in Gaza where there is no compensation and social security and people rely on their extended family for psychological, social and economic support (Farsoun 2004). Intuitively it could be expected that in Gaza there will be a more positive attitude towards LBP because of these societal differences.

Chronicity and disability in NSLBP raise a number of problems for the patient-therapist relationship and the process of resuming normal activities. It has been said that the classical biomedical model of intervention cannot accommodate the concept of NSLBP (Daykin and Richardson, 2004) because it is a condition that medicine cannot always cure and the pain involved may not be due to pathology or tissue damage. Thus, Helman (1995) considers that patients with NSLBP are encouraged to develop a double identity: as “patients” on the one hand and as “co-healers” on the other hand, working in collaboration with the health care professionals. The patient’s participation in the management of his/her condition can raise important issues concerning the phases of assessment, treatment and the process of resuming normal activities. Anecdotal evidence indicates that such participation and collaboration is not known in Gaza and consequently one of the objectives of this research was to explore the experiences of patients in relation to the management of their condition and their coping strategies.

There are many studies that have focussed on communication between patients and health professionals (Prkachin and Craig, 1995; Waddell, 1998; Hadjistavropoulos and Craig, 2002; Hadjistavropoulos et al., 2004; Perreault and Dionne, 2005;), but few of the studies directly observing medical communication have been conducted in developing countries or in non-medical settings. However, there is some evidence that the interpersonal dynamics of these medical encounters are generalizable to diverse settings and health contexts. For instance, an analysis of family planning consultations in Egypt (Abdel-Tawab, 1995) suggested that patient-centred visits were associated with greater patient satisfaction and treatment programme completion rates. Analysis
of primary care medical consultations in Trinidad and Tobago (Roter et al., 1998) and in Honduras (DiPrete-Brown et al., 2000) similarly indicates a positive association between patient-centred communication and patient satisfaction. There is currently no research about medical communication in Gaza, and the author’s experience of working there suggests that a patient-centred approach is not practised, but these findings suggest that a patient-centred approach can, and perhaps should be, applied to management of patients with LBP in the Gaza Strip.

Despite the importance of their participation, patients in both developed and developing countries are generally considered to play a passive role in consultations (Roter, and Hall, 1992; Abdel-Tawab, 1995; Roter et al., 1998; Kim et al., 1999). Many factors may contribute to limited patient participation, including the social distance between patient and health care provider, traditional medical conventions about health care provider’s-patient relations and patients’ understanding of pain (Roter and Hall, 1992; Waddell, 1998; Main and Spanwick, 2000). There is no evidence to show this is the case in Gaza, but evidence from Jordan and Saudi Arabia (Al Oraibi 2002, Al Sobayel 2006) and subjective impressions indicate that this would be so.

An understanding of the cultural background that influences individual physiotherapist and patient beliefs and behaviour is needed in order to understand the current situation and develop strategies for physiotherapy management of LBP in the Gaza Strip. This theme is discussed in the next sections dealing with the social life and culture of the Palestinian people living in the Gaza Strip and how that culture influences both healthcare professional and patient perspectives on LBP. Also described are the health services available in the Gaza Strip for patients with LBP.

2.3 General characteristics of people in the Gaza Strip

People in the Gaza Strip are Palestinians (Sayigh 2007). The vast majority of them are Sunni Muslims. They speak the Arabic language and share the values and beliefs of Arabic culture. The main source of all inspirational knowledge in Islam is “The Holy Quran”. This book is considered by followers of Islam to be the word of Allah or
God, revealed by Him to the Prophet of Islam, Mohammed. A secondary source of Muslims’ inspiration is the Hadith or Sunna, in which are the recorded and authenticated sayings and traditions of the Prophet of Islam, Mohammed. The Quran is the guiding spirit that every Muslim is expected to follow, including healthcare professionals treating patients and patients coping with their illness (Shahid, 2003). Approximately 2% of people in the Gaza Strip are Christians. Most of them live in the Gaza city and are part of the Eastern Orthodox tradition and share similar values to their Muslim neighbours. It might be considered that reliance on the Quran and other revered scriptures leads to a passive attitude to health care, something that has been shown, in western society, to be undesirable. In order to consider these issues, one of the aims of this research was to explore the experiences of patients’ coping strategies.

2.4 The geography of the Gaza Strip

The Gaza Strip is the southern part of Palestine. It is a flat, narrow band of land wedged between the Mediterranean Sea, Israel and Egypt. Its length is 46 km and its width is 6-9 km, with a surface area of 363 square km. The map in Figure 2.1 shows the geography of the Gaza Strip.

The Gaza Strip was part of the Turkish Empire from 1500 until 1918, then part of the British Mandate of Palestine from 1918 to 1948 and was controlled by Egypt from 1948 to 1967. In 1967, Israel occupied the Gaza Strip and took up 18% of the area of the Gaza Strip for settlements (UNRWA, 1998). In 1994, the Palestinian National Authority took over responsibility for the civil duties of the Palestinians in the Gaza Strip while the borders and all foreign affairs remained controlled by the Israeli Government. In September 2004, Israeli army and settlers left the Gaza Strip. Israel maintains offshore maritime control as well as airspace control. The Gaza Strip comprises five districts. All Palestinian universities, governmental offices, specialised hospitals and most business and trades are in the Gaza district.

The other area considered to be part of Palestine, the West Bank, is separated from the Gaza Strip by 80 kilometres of Israel. There are family connections between the two areas and many families have been unable to meet for a number of years due to border
controls. This history of being under occupation and present situation of border control are factors which may affect the prevalence and experience of LBP.
Figure 2.1: The Geography of the Gaza Strip (Palestinian Information Office)

Israel occupied with current status subject to the Israeli-Palestinian Interim Agreement – permanent status to be determined through further negotiation.
2.5 Population

The Annual Report published by the Palestinian Ministry of Health (PMOH) in July 2003 demonstrated that 1,264,560 Palestinians were living in the Gaza Strip under the government of the Palestinian National Authority at that time. This indicates that the population density was about 3,483 persons per square km. Approximately 50% of the total population were less than 15 years of age, 26.2% were 16-29 years, 14.4% were 30-49 years, 8.8% were above 50 years old, the average family size was 8 people, and the population growth rate in the Gaza Strip was about 4% per annum (PMOH, 2003), which indicates an annual increase in the total population. Approximately 25-30% of the population have their origins in Gaza and 70-75% are refugees who entered the Gaza Strip during the Arab-Israeli conflict of 1948, 50% of whom are still living in eight refugee camps. At that time, the United Nations established the United Nations Relief and Work Agency (UNRWA) to care for the Palestinians in the refugee camps and is still doing so today. The population figures quoted above are similar today.

According to the 1997 Palestinian Census, 38% of the Palestinians in the Gaza Strip lived below the poverty line of US$ 1254 a year. Seventy percent of men participate in the labour force (with many employed as casual labourers in Israel when borders are open) compared with only 12% of women. The adult literacy rate is 19% for males and 9% for females, and unemployment is estimated at 70% (PNA, 1997). Reliable figures are not available for the present but are estimated to be worse, rather than better, due to the current economic situation in the Gaza Strip.

Because of the high population density in the Gaza Strip and the land lost because of Israeli settlements, many people have moved to live in what were previously agricultural areas and now, it is difficult to distinguish villages from towns. With the coming of the PNA, the infrastructure in Gaza became better developed and most people gained access to piped water, electricity, telephone services, piped sewage disposal networks and garbage collection. Since the beginning of the Second Intifada, these services have deteriorated. Overcrowding, poor community infrastructure and
reduced economic status are all factors which may affect prevalence and experience of LBP.

2.6 Family structure and social relationships

In Gaza, people live in extended families as part of a larger social unit called a "hamula" or clan, often living as neighbours in the same quarter of a town, village or a camp. A hamula refers to a group of families with historical roots and sharing one surname. These families usually cooperate in social events and enterprises such as building a home or paying marriage expenses (Geraisy, 1994, Farsoun 2004). Hamula members are generally collectively oriented rather than individualist, so they feel mutually responsible for the protection and security of each member, including the care of members with illness and disabilities. The extended family gains its reputation and position in society through the number and quality of its members and their material standing. Relationships in an extended family do not always take into account the individual choices of its members because decisions made by hamula seniors focus upon the benefit and reputation of the family as a whole. When there is a problem in the family, senior members gather together to hear grievances and discuss solutions. This group ethos may put great pressure on individuals as the whole hamula is concerned in matters of marriages and social behaviour. Although the nuclear family is becoming more common, in most cases, the family is still an extended group, spanning three or four generations, with different branches of the extended family living under the same roof or in neighbouring dwellings (Simister and Younis, 1999). The influence of hamula seniors on an individual with LBP may be a factor in their expectations and experience of management.

In the Palestinian community, the father (or, in his absence, the eldest son) is viewed as the head of the family and the main breadwinner. He is the chief decision-maker regarding friendship, social contacts, marriages, education and health care. The mother's responsibility is to care for the family, prepare meals, keep the house and look after the children. Daughters usually help mothers with domestic activities until they are married and move to the house of their husband's family. Children are important in the Palestinian community, especially males, because men are considered
to contribute more to the family’s influence in the community. Children gain their role models from parents and other family members. Traditionally, people in Gaza expect boys to be active and productive but girls are expected to be more passive. The first son is particularly important because the parents will take his name, becoming, “father of” and “mother of” so-and-so (Simister and Younis, 1999, Al-Mateen, 2004). The influence of male members of the family may affect patients’ access to, and expectations of treatment for LBP.

Families and neighbours are integrated in the Palestinian community through social gatherings which is the main leisure activity in the Gaza Strip. Families and neighbours visit and share in eating, drinking tea and coffee and talking. Much of the talking is a discussion of community affairs, politics and recounting stories. Welcoming sick people in social gatherings as well as old people is considered as part of the Islamic faith and Arabic traditions (Zougby, 2002). This desire to socialise may positively affect patients’ recovery from LBP and capacity to deal with pain and disability.

In the development of a collective response to social events, Palestinian community leaders are influential. Formerly these leaders were respected persons from prominent local families, religious leaders or politicians. Today they are likely to play a role in the political, educational, health or social sphere. These leaders also play an important role in maintaining social justice and order, mediating disputes between families and individuals and some are involved in non-governmental organisations for health care (Simister and Younis, 1999).

It can be argued that the family provides the most immediate and most powerful social feedback and pressure for patients with LBP. Family members may influence how patients think and deal with their back pain. The sole breadwinner with a family to support may be under pressure to remain at work or to return to work as soon as possible, despite continued LBP. Waddell and Waddell (2000) highlighted the importance of social support in the management of LBP. They found that family support in the UK leads to faster recovery and return to work and reduces the risk of chronic pain and disability. On this basis, it could be suggested that, in Gaza, recovery and return to work after LBP would be fast, when compared with some western
countries. For this reason, the research reported in this thesis considers prevalence, management and experience of LBP in Gaza.

2.7 Social life in the Gaza Strip

Although many aspects of the Palestinian culture are influenced by religion, there is often confusion over whether something is done for religious reasons, cultural obligations or some other reason. It would seem that religious and cultural obligations are often intertwined. For example, people visit their friends, relatives and neighbours who have health problems for different reasons. Some authors suggest that this social act is a religious obligation (Abu-Rida, 1998). Other authors have argued that social relationships between Arab people, including the visiting of ill people, dates back to pre-Islamic times (Al-Dawalibi, 1998). In Gaza, religious and non-religious individuals visit wounded people who have fought against the occupation. This can be considered both a national or religious obligation. Social life in Gaza appears to be influenced by a combination of Islamic religious considerations, Arabic traditions, family demands and political determinants. Religion influences people’s way of life on a daily basis and is reflected in social interactions and individual’s beliefs and behaviour. Arabic traditions such as generosity and family unity keep people close to each other and promote social interactions (Zougby, 2002). Family unity plays a role in caring for patients, parents, old people and people in need. Politics determines the daily life as it affects the economy of the entire community.

Historically, Palestinian culture has been affected by the political instability of the country. From 1970 to 1987, there was a level of coexistence between Israel and the Palestinians in the West Bank and Gaza. At that time, Israelis and Palestinians shared business, and on some occasions, shared in social events. Palestinians and Israeli civilians had no restrictions on visiting and doing business between the Palestinian Territories and Israel. During this period of occupation, the Palestinians in the Gaza Strip were affected, to some extent, by the Israeli life and culture. Many of them speak Hebrew and have been exposed to, and benefited from, a more western-style health care in Israel and observed more western social and health behaviours there.
Despite this exposure to Israeli culture, Palestinian perceptions of health and illness are still mainly influenced by their Arab, Islamic heritage.

More recently many of the population in the Gaza Strip and the West Bank have not had access to health care because of restrictions on mobility inside Gaza (Ramlawi et al., 2003). In particular, curfews, road closure/s, road block/s, lack of transport, fear of military incursions, distance, delay at check point/s and lack of permission to travel have prevented patients accessing health care and may have contributed to the development of chronic pain and disability (Korn 2008).

Palestinian society has been described as a mixture of a developed and developing country (Bargouthi and Lennock, 1997). Factors contributing to the developing country description have already been mentioned. The more developed aspects of Palestinian society may be due to proximity and access to Israeli society and the changing values and “remittance” money sent by Palestinian emigrants to western societies, which have led to a high level of material prosperity for some people. Some homes in Gaza have a range of domestic appliances (despite intermittent electricity supplies) and most teachers at the Palestinian Universities gained their education in western universities (although many are not receiving regular salaries). The situation described above may account for cultural changes with regard to social life and health care despite the influence of political instability on children and young people. Nevertheless, family values have survived the dramatic events of the years of occupation.

2.8 Economic issues

Despite early positive signs after the coming of the PNA, the continuing Israeli-Palestinian conflict has progressively affected the Palestinian economy to the point that many families in the Gaza Strip depend on charity and the international aid agencies for their daily needs. This situation of poverty has also affected the health of the population and has led to a breakdown of social structures. For example, the increase in children who do not attend school and stand by the roads washing cars can be observed daily. Also, people active in religious and social welfare organisations
have reported an increase in divorce, and health care professionals have documented an increase in the incidence of anxiety / depression in the Gaza Strip (Qouta and El Sarraj, 1993; Qouta, 2000).

The Palestinian Ministry of Health and Al-Quds University surveyed access to health services in 1897 households in five districts in the West Bank and the Gaza Strip, between March 2002 and January 2003 (Ramlawi et al. 2003). The outcomes of this survey for the Gaza Strip showed that the average unemployment rate among heads of households was 54%, with the highest rate of 79% in Rafah. In 67% of the surveyed households in Gaza, the total income had decreased by 33% between March 2002 and January 2003. Seventy per cent of the surveyed households reported that they had to borrow money, 24% sold some of their assets, 13% received help from families or friends, and 11% used more than one of these coping strategies. This report added that in 61% of the households, all members had health insurance; in 9%, some household members had insurance but in 30% of the households, nobody was insured. Among those families initially insured, 55% of households could not continue to pay for their health insurance. This study did not indicate how the sample was selected and how the data were analysed. However, these are the only figures available and they do support the personal experience of the author about the current economic situation.

High population density, limited land access and strict internal and external controls have kept economic conditions in the Gaza Strip degraded. The beginning of the Second Intifada in September 2000 sparked an economic downturn due to the Israeli closure policies. These policies have disturbed labour and commodity relationships with the Gaza Strip. In 2001, and even more severely now, Israeli military measures resulted in the destruction of much capital plant, the demolition of hundreds of houses, the disruption of administrative structure and widespread business closures. The United Nations (UN) estimated that more than 100,000 Palestinians, from the West Bank and the Gaza Strip, out of the 125,000 who previously worked in Israel or in joint industrial zones have lost their jobs in 2006 (UNRWA Publications, 2006). International aid of $2 billion to Gaza Strip and the West Bank in 2004 prevented a complete collapse of the economy and allowed some reforms in the government’s operations (World Bank, 2006). All these issues contribute to the poor economic
situation in Gaza and may be considered psychosocial factors that may affect the prevalence and experience of patients with LBP.

2.9 Political issues

When considering the culture and its impact on patients with LBP in the Gaza Strip, it is essential to consider the political situation, particularly as it affects access to healthcare delivery and influences the psychological and socioeconomic aspects of daily life. People in the Gaza Strip have been under some form of Israeli occupation since 1967 and have experienced great political upheaval. The three sections of Palestinian territory (the Gaza Strip, the West Bank and East Jerusalem) are separated from each other by Israeli territory and free passage between these sections is not yet possible. Until September 2005, the Gaza Strip itself was divided into three regions by Israeli military check points which were subject to daily closure that could last for hours, days or weeks without apparent reason (Korn 2008). Such closures affect access to healthcare as the more advanced examination and treatment equipment, such as CT scanning, is located in main hospitals in Gaza city.

From December 1987 to 1994, the Gaza Strip experienced a popular uprising (the First Intifada) which contributed to the pressure for the Peace Process inaugurated by the Oslo Accords and led to the establishment of the Palestinian National Authority in 1994. At this time, the Palestinian Ministry of Health took over the health services that had previously been administered by the Israeli Civil Administration. The peace treaty signed between Israel and the Palestinian Liberation Organisation in Washington on the 13th of September 1993 was a historic occasion for both Israelis and Palestinians. It looked forward to international recognition of Palestinian national rights, and the cessation of violence and consequent threat to life and security in both communities. One important element of the treaty was the promise of international economic and political support to the Palestinians. The promised recognition and all that it involved was not forthcoming. This led to the start of the Second Intifada in September 2000. This uprising caused many casualties adding to the already high levels of disabilities, poverty, unemployment and closures with many psychosocial and socioeconomic consequences for the Palestinians in the Gaza Strip. It can be seen
that politics has significant implications for the variety of experiences of health in general and of people with LBP. It is within this political situation that the research reported in this thesis has meaning. The experience of patients with LBP and the work of physiotherapists dealing with patients with LBP cannot be divorced from the political context in which life is lived.

2.10 The influence of religion on social behaviour and illness

The majority of Palestinians in the Gaza Strip are Sunni Muslims. Religion is the basis of much knowledge learnt at home, schools, universities, mosques, and a topic of conversation at social events and in everyday life. The main source of knowledge in Islam is “The Holy Quran” and the Hadith or Sunna. The word “Muslims” means, simply, believers. Muslims believe that all Quranic statements are true, that science has confirmed some of them in the past, and will confirm the rest in the future. They also believe that if science has not confirmed Quranic truths yet, it needs to develop better research, rather than question the authenticity of the Quran (Shahid, 2003).

It is clear that religion plays a major role in all aspects of the life of people in the Gaza Strip including health. The Quran is not a book of medicine or of health sciences, but there are ideas therein that can lead to development of guidelines on health and disease. Sunni Muslims believe that the Prophet Mohammed set an example to mankind, so his traditions in matters of health and personal hygiene are considered to be a guide for his followers.

Islam puts considerable emphasis on promoting good health and prevention of disease and health care includes both physical and spiritual care. Spiritual care involves the acts of worship, while physical care refers to the maintenance of the physical structure (the body) in which the spirit resides. There are numerous examples that can be drawn from Quran and Sunna as guidelines for health. The following statements give examples of what Muslims learn about Islam at home and school regarding health principles and prevention measures.
The value of exercise in maintaining health: The Prophet Mohammed advised all Muslims to encourage their children to take regular physical activity. He, himself used to exercise with his family and engage in physical work with his companions (Khan, 1990). This endorsement of physical activity could be used by patients to manage their LBP and encouraged by physiotherapists. The research described in this thesis will explore patients' experience of pain, disability and physical activity.

The state of disease: Muslims are advised to accept illness as the will of God as Kaffara (a blessing from God) for their sin, and to ask him to remove the affliction. This means that Muslims believe that illness is caused by the will of God and they demonstrate their faith in Him by how they cope with it. The Quran says: “If God touches thee with affliction, none can remove it- but He: if he touches thee with happiness, He has power over all things” (Quran, 6:17). Meanwhile, Islam ordains the taking of all steps to protect against disease. The prophet said: “Do not harm yourselves or others”. “Do not let those infected transmit their disease to those who are healthy” (Khan, 1990). “If you know that plague is raging in a specific land, do not enter it and if it happens in a land where you are, do not seek to leave it (Khan, 1990).

With regard to treatment, some Arabs asked the Prophet: “do we take medicine for any disease?” The Prophet said: “Yes, O! You servants of Allah take medicine as Allah has not created a disease without creating a cure except for one. They asked which one, he replied old age”. In other Hadith, the Prophet Mohammed said: “Seek treatment for God creates diseases along with their cure”. “For every illness there is a medicine; if the right medicine is given there will be a cure” (Khan, 1990). These quotations demonstrate that, contrary to western opinion, Islam can be seen to encourage personal responsibility for health and rehabilitation. There is currently no evidence that patients who are Muslims make this link between religion and health. It would be interesting to see if these concepts are seen in participant responses in the research in this thesis taking place within an Islamic, Arabic context.
2.11 Attitudes and beliefs about health and illness

In the Gaza Strip, most people form their beliefs and attitudes about health and illness from religious teachings, social interactions, their own health experiences and contact with health care providers. Health education in school is very poor, but recently, the Ministry of Health established a few health education programmes for the public. These programmes are run by doctors who focus upon epidemic diseases and are usually delivered in medical language, which is largely inaccessible to the general population. Research in non-Arab cultures has reported that many societies believe that illness and accidents are supernatural punishment for the misbehaviour of either the patient or a member of the patient’s family (Martin and Henry, 1989). However this is not the situation in Islamic culture as it is the Quran prohibits illness being considered as a punishment.

Muslims see illness as a test from Allah. In this context, the prophet Mohammed said: “No Muslim will be bothered by hardship or illness, or anxiety or worry, or harm or sadness, except that, by it, Allah will cover up some of his sins” (Haddith). Some Muslim scholars have suggested that the greater the illness, the greater is the reward (Khan, 1990). This religious interpretation may cause people to show patience and ability to tolerate the consequences and impact of the injury or illness, such as in LBP, in order to be rewarded by Allah. This has also been demonstrated in many verses of the Quran, in which, Allah encourages Muslims who have health problems to be patient and persistent and to place their hope in Allah’s mercy. It would be interesting to know if health professionals can influence the way patients interpret the concept of “inshallah” in order to promote a collaborative approach to rehabilitation.

Attitudes to injury or illness can be seen when patients greet such events with phrases such as “Inshallah” (God willing) or Allah Kareem (God is generous). These phrases can be understood in two different ways and may guide the patient in one of two opposite directions (Khan, 1990). In one direction, a patient may understand that “this is given by the God and there is nothing to be done about it”. This belief makes patients passive and works against them. In other words, this belief may affect their self-efficacy to develop strategies to cope with the problem. On the other hand, a
patient may understand that “this is a health problem, healthcare providers have something to do, I have something to do and in this way God helps patients to cope with their health problems. This belief provides patients with coping strategies and may enable them to actively take part in the management of their health problem. It is possible that the choice between active and passive interpretation of “Inshalla” may be a feature of personality (Al-Dawalibi, 1998), but at present, there is no evidence to suggest this. It would be interesting to know if health professionals have an active or a passive concept of “inshallah” and if these beliefs affect their approach to the management of patients with LBP.

Pain or illness experience differs from one person to another. One aspect of social life in Gaza is visiting friends, relatives and neighbours when they have health problems. During these visits, people talk about their own health experiences and visitors may advise patients whether to seek medical care or not and also where to go for medical treatment. These experiences may influence the attitudes and beliefs of patients and families towards health problems.

Whilst there is no supporting research, it would seem logical that beliefs and attitudes of people in the Gaza Strip might be strongly influenced by religious and social factors. Further research is needed to identify how much people are influenced by religion and how much they are influenced by social elements. Some of these issues were explored in physiotherapist and patient responses of focus groups.

2.12 Healthcare services available in the Gaza Strip

In the Gaza Strip, healthcare services are provided by four sectors: the Palestinian Ministry of Health (MOH), the United Nations Relief and Work Agency (UNRWA), the non-governmental organisations (NGOs) and the private sector.

2.12.1 Ministry of Health

The Ministry of Health (MOH) is the major employer of health professionals and accounts for approximately 60% of those employed in the health sector in the Gaza
Strip (Palestinian Ministry of Health, 2003). Ministry of Health services are provided free to all pregnant women and children under the age of three years. Other health services such as gynaecology, medical and surgical treatment, and inpatient and outpatient treatment, are available from the MOH to patients who have health insurance. Physiotherapy is provided by the MOH in hospitals and clinics in the primary health care setting. Patients with LBP require referral from doctors in order to have physiotherapy from the MOH services. The fact that many families are now unable to pay for health insurance may affect the number of people seeking treatment for LBP and following advice given to them, if it involves paying for physiotherapy and taking time off work.

2.12.2 United Nations Relief and Work Agency

Following the Arab-Israeli conflict of 1948, the United Nations Relief and Work Agency for Palestinian Refugees (UNRWA) in the near East, was established by United Nations General Assembly Resolution 302 (IV) of 8 December 1949 to carry out direct relief and work programmes for refugees who arrived in Gaza. UNRWA provides Palestinian refugees with basic services including education, health, relief and social services.

Approximately 900,000 Palestinian refugees live in the Gaza Strip, accounting for 70% of the total population. Over half of them live in eight refugee camps. They fled to the Gaza Strip as a result of the 1948 Arabic-Israeli war. Most of them came from Jaffa, towns and villages south of Jaffa and from the Beersheva area in the Negev. It is estimated that the Palestinian refugees in the Gaza Strip represents 22% of all UNRWA registered Palestinian refugees in the Middle East. The refugee camps in the Gaza Strip have one of the highest population densities in the world. For example, more than 76,000 refugees live in Beach Camp, an area of less than one square kilometre. In addition, the living conditions in the refugee camps are characterised by high unemployment and inadequate basic infrastructure, with open sewers, limited supplies of clean water and unsatisfactory drainage systems which make flooding commonplace in the often harsh winters. As it is suggested that psychological and socioeconomic circumstances may increasingly affect the incidence of LBP and its
consequences (Linton 2000) it would seem rational to speculate that in Gaza, where living conditions are very stressful, there will be a negative effect on people with LBP.

Health services provided by UNRWA in the Gaza Strip include primary health care, assistance with secondary health care and environmental health. Physiotherapy is provided free of charge by UNRWA in five refugee camps as a part of primary health care. UNRWA provides assistance towards the cost of secondary medical care, especially emergency and life-saving treatment, at public, non-governmental and private hospitals. It could be argued that there is insufficient physiotherapy provided for the needs of the refugee population, who may be amongst those most susceptible to LBP.

2.12.3 Non-governmental organisations (NGOs)

Non-governmental organisations such as the Union of Palestinian Medical Relief Committees provide health services on a charity basis. Health services provided by these organisations mainly focus on child health and disability and their budgets depend largely on international aid. During the period between 1987 and 1994, there was considerable international interest in rehabilitation projects in the West Bank and the Gaza Strip. As a result of this, there are now ten physiotherapy clinics run by NGOs in the Gaza Strip providing outpatient care. These clinics provide physiotherapy for patients with LBP as part of their health care. The NGOs fulfilled an important role in broadening health care provision during the years of Israeli occupation, and they continue to do so today (Schnitzer and Roy, 1994; Barghouthi and Lennock, 1997). In order to describe a holistic picture about current physiotherapy provided for patients with NSLBP, and possible factors influencing its delivery and outcome, the sample described in this thesis included participants from different sectors of health care in the Gaza Strip.
2.12.4 Private health care

The private sector consists of clinics run by health professionals from all medical specialities, including physiotherapy. This sector provides health services for people who can pay. However, from the researcher's observation, the quality of physiotherapy provided by this sector is no better than that provided by the MOH, NGOs and UNRWA.

2.13 Medical management of patients with low back pain in the Gaza Strip

Patients with LBP are routinely seen first by either a general practitioner in MOH and UNRWA services or by an orthopaedic consultant in the private sector and NGOs clinics. The general practitioners and the orthopaedic consultants are the main source of referral of patients with LBP to physiotherapy. For many physiotherapists, the current model of referral of patients with LBP is unsatisfactory. Anecdotally, physiotherapists question the fact that LBP patients are not referred to physiotherapy early enough in the development of their symptoms and why the referral does not include assessment and treatment notes. Many doctors are prescriptive in their referral of patients in terms of modalities (e.g. massage, short wave, exercise) to be used and number of treatment sessions. Most doctors know little, or nothing, about physiotherapy and yet it is doctors who control patients' access to physiotherapy and influence the type of physiotherapy assessment and treatment provided for patients with LBP. These issues will be discussed in physiotherapist' focus group discussions.

2.14 Development of the physiotherapy profession

Physiotherapy practice in the Gaza Strip began in the early 1970s with two American physiotherapists who established the first physiotherapy department and trained a group of 8 Palestinians in the Baptist Hospital. They established a two year course for physiotherapy assistants, which allowed the diplomates to work under supervision. During the 1980's UNWRA set up a two year assistants programme that is still ongoing.
In 1979 – 1980, seventeen Gazan physiotherapists gained degree education (4-5 years in length) from Egypt while other physiotherapists were trained in Eastern Europe (40% of present practitioners). The first degree in physiotherapy in Palestine was established at Bethlehem University in 1989 (Dawson, 2000). Now there are four universities in Palestine providing degrees in physiotherapy, one of which is in Gaza. Approximately fifteen physiotherapists graduate every year in the Gaza Strip.

The total number of physiotherapy practitioners in Gaza is approximately 180, 70% of them are physiotherapists and 30% assistant physiotherapists. This group of 180 provides physiotherapy services to a population of 1.3 million. When compared to the number of physiotherapists in Ireland (in excess of 1000) for a country with a population of around 4 million (Dawson, 2000), there would seem to be a need for more physiotherapists in Gaza. Post-graduate courses in the treatment of LBP, such as manipulative therapy and acupuncture, are not currently available to physiotherapists and physiotherapy provision for patients with LBP is limited to therapeutic exercises, massage and electrotherapy. Other forms of therapy for LBP namely, osteopathy and chiropractic, are not available at present in Gaza. Content of most curriculum documents and observation of practice would suggest that most Gazan physiotherapists take a biomedical approach to LBP. One of the objectives of this research is to explore physiotherapists’ use of biomedical and biopsychosocial approaches to the management of LBP.

2.15 Availability of physiotherapy for patients with low back pain

The MOH in the Gaza Strip provides inpatient and outpatient physiotherapy in general hospitals and primary health care clinics, and UNRWA, NGOs and the private sector provide outpatient physiotherapy only. All these organisations provide basic physiotherapy for patients of all ages and both genders. Specialisation within physiotherapy is still under developed and guidelines for the management of LBP have not yet been produced. Health records and treatment records are not kept to any extent in the Gaza Strip, and therefore, there is a general ignorance about the extent of
LBP as a health problem and the way it is managed. It is hoped that this research will provide data about the prevalence of LBP in Gaza.

2.16 Implications for research in the Gaza Strip

The establishment of higher education began in the Gaza Strip in 1987; before then there were no universities to provide students with opportunities to gain a degree or to undertake research in any subject. Since the Palestinian Authority took over responsibility for health care in 1994 it has concentrated on provision of health services based on ideas from other countries rather than supporting local research projects. There is no funding allocated by the Palestinian Authority for research in the Gaza Strip, but some foreign donors give money for specific projects. Moreover, the political situation in the Gaza Strip interferes with the activity of researchers, as mobility can be restricted at any moment and opinions can change, which can affect the methods and results of research. Lack of libraries, electronic databases and inadequate technology can be considered challenges confronting research and researchers in the Gaza Strip.

2.17 Summary

Palestinian culture is dominated by Arabic traditions, Islamic teachings, economic deprivation and political upheaval. All of these elements contribute to the development of beliefs and attitudes of people in the Gaza Strip about the problem of LBP and its management. The Gaza Strip is characterised by high population density, high unemployment and inadequate basic infrastructure, which in other contexts, are linked to risk factors in the literature about LBP.

Physiotherapy is a relatively new health profession in the Gaza Strip. Many of the physiotherapists who are working in the Gaza Strip gained their qualifications from outside Palestine which may cause conflict between what they learned abroad and its possible application in Gaza. It is suggested that there are cultural factors that may play a role in physiotherapy delivery in the Gaza Strip.
People in the Gaza Strip live in extended families which can provide some social support during times of illness. They suffer from the long term effects of occupation and encounter daily psychosocial and economic difficulties which may provoke somatic pain and negatively affect the outcomes of treatment regimes. People who follow Islamic teachings can use their beliefs as coping strategies for pain relief and health promotion.

Research is needed to investigate if socio-cultural and religious factors can be facilitators or barriers for health promotion in the Gaza Strip. In the next chapter, various research methodologies will be examined in order to set the scene for this research project carried out in relation to LBP in the Gaza Strip. In subsequent chapters the prevalence of LBP, physiotherapists' management strategies for LBP and patient experiences will be discussed in light of factors mentioned in this chapter.
Chapter Three

Methodological Approaches

3.1 The intent

As stated in Chapter 2, section 2.14, the first degree physiotherapy education in Palestine was established in 1989 as urgent demand for Palestinian society. In Gaza, physiotherapy practice began in the early 1970s with two foreign physiotherapists. Now physiotherapy is provided in primary and secondary health care in all districts of the Gaza Strip and there are four universities in Palestine providing degree in physiotherapy. Physiotherapy is currently provided for patients with LBP in Gaza but how these patients are managed and the value of physiotherapy provided has not been evaluated before. In addition, the epidemiology of LBP in Gaza has not been investigated before.

The aim of this research study was to investigate the prevalence of LBP and factors that might influence the delivery of physiotherapy for patients with LBP in the Gaza Strip and the objectives were as follows:

- To investigate the epidemiology of low back pain and its related risk factors in the Gaza Strip. This provides information necessary for prevention and management of the condition. It was carried out by cross-sectional survey reported in Chapter 4.

- To explore the attitudes and beliefs of physiotherapists about LBP and its management. This would contribute to development of effective approaches and management strategy for LBP. Data were obtained by two questionnaires and this study is reported in Chapter 5.

- To determine current physiotherapy provision for patients with LBP in the Gaza Strip. This is necessary for evaluation and adopting new management strategy. This objective and the next one were achieved by conducting focus group interviews reported in Chapter 6.
• To explore issues that may influence the provision of physiotherapy for LBP and its outcomes in the Gaza Strip. These issues are important for planning treatments based on local culture and societal needs.

• To explore the experiences of patients with LBP in relation to the management of their condition, their coping strategies and the impact of LBP on various aspects of their daily lives. Exploration of these issues is important for physiotherapy management of LBP. Data were obtained from focus group interviews and this study is reported in Chapter 7.

Both qualitative and quantitative research strategies were used as, according to Neuman (2003) and King et al., (1994), the best research often combines the features of both approaches. In this chapter methodologies employed and methods used in this study will be discussed, arguments presented for the combined approach and justification made for data collection and analysis methods used at the different stages.

Quantitative data collection and analysis methods were used to collect numerical data about the prevalence and risk factors of LBP, and to provide informative data on physiotherapists' attitudes, beliefs and recommendations on the problem of LBP and its management. Qualitative research methods were employed to explore the experiences and views of physiotherapists and patients about LBP, the way it is managed and the factors influencing the outcomes of physiotherapy. These data were used to describe the size of the problem of LBP and its impact on patients' life and health care.

The research reported in this thesis comprised four studies that were carried out in sequential stages to allow different levels of data to integrate in a complementary way. These studies were conducted in two stages (stage one and stage two) and Flow Charts 3.1 and 3.2 demonstrate the studies conducted in each stage. This chapter provides a description and critical evaluation of the methodological approaches used in the various stages of the investigation. It begins with a background to quantitative and qualitative research approaches.
Flow Chart 3.1: Studies conducted and tools used in Stage One

Stage One

The prevalence of low back pain in the Gaza Strip
- Telephone Survey
  * 502 households
  * 1538 people
  * 422 adults with LBP
  * 412 participants

Physiotherapists’ attitudes, beliefs and recommendations for management of low back pain
- Questionnaires
  * The PABS-PT
  * The ODAP
  * 77 participants
3.2 Quantitative and qualitative research

Many authors (LoBiondo-Wood and Haber 2002; Neuman 2003; Silverman, 2005) highlighted the importance of using mixed approaches of quantitative and qualitative research in health care investigation. These authors argue that although quantitative and qualitative research approaches come from different philosophical positions, they both have a scientific basis. Each is considered to have its strengths and limitations, topics or issues to study and can provide insights into social life. Quantitative researchers test hypotheses in order to identify cause and effect and gather numerical data, while qualitative researchers gather explore issues, such as human behaviour and behavioural changes. Quantitative researchers study phenomena using numerical means to produce statistical findings of the relationships of the phenomena under study (Creswell, 1994; Mays and Pope, 2000; Pope and Mays, 2000) while qualitative researchers seek to describe the complex nature of people and how individuals perceive their experiences within specific cultural and social contexts (Portney and
Watkins, 1993). Table 3.1 points out the major differences between qualitative and quantitative research.

<table>
<thead>
<tr>
<th>Table 3.1: Quantitative Research versus Qualitative Research</th>
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<tbody>
<tr>
<td><strong>Quantitative Research</strong></td>
</tr>
<tr>
<td>Investigates objective facts</td>
</tr>
<tr>
<td>Focuses on variables</td>
</tr>
<tr>
<td>(Creswell, 1994)</td>
</tr>
<tr>
<td>Reliability is key feature</td>
</tr>
<tr>
<td>(Pope and Mays, 2000)</td>
</tr>
<tr>
<td>Value is not present</td>
</tr>
<tr>
<td>(Hicks, 2004)</td>
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<tr>
<td>Context is independent</td>
</tr>
<tr>
<td>Many cases and subjects</td>
</tr>
<tr>
<td>(Hicks, 2004)</td>
</tr>
<tr>
<td>Uses statistical analysis</td>
</tr>
<tr>
<td>(Hicks, 2004)</td>
</tr>
<tr>
<td>Researcher is detached</td>
</tr>
<tr>
<td>(LoBiondo-Wood and Haber, 2002)</td>
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Quantitative researchers focus upon issues of design, measurement and sampling because their deductive approach emphasises detailed planning prior to data collection and analysis. Qualitative researchers focus upon issues of richness of raw data because their inductive approach emphasises developing insights and generalisations from the data collection. The nature of data in qualitative research is often considered to be soft data, in the form of impressions, words and sentences compared to the hard data, in the form of numbers characteristic of quantitative research. These differences in approach have given rise to different research strategies, data collection and data analysis techniques.
Both research approaches use strategies for providing rigour in research conducted, albeit using different methods (Creswell, 1994; Mays and Pope, 1995; Denzin and Lincoln, 2000; Holliday, 2002). Bias control in data collection and analysis is also an issue considered important by both approaches, with different methods used to control it. Qualitative research has been criticised as biased because of limited descriptions of methods and designs in research reports (Mays and Pope, 1995). There has been considerable debate related to the quality of qualitative research (Hammell et al., 2000), which has led researchers to develop strategies to provide increased rigour for qualitative research (Lincoln and Guba, 1985; Creswell, 1994; Mays and Pope, 1995; Pope and Mays, 2000).

Carpenter and Hammell (2000) have suggested that the two approaches are not necessarily contrary to each other but may complement each other. Neuman (2003) and King et al., (1994) believe that the best research often combines the features of each approach. Combined use of quantitative and qualitative research in sequential stages is recommended by Regin (1994) who argues:

"The key features common to all qualitative methods can be seen when they are contrasted with quantitative methods. Most quantitative data techniques are data condensers. They condense data in order to see the big picture. Qualitative methods, by contrast, are best understood as data enhancers. When data are enhanced, it is possible to see key aspect of cases more clearly."

The research reported in this thesis used combined quantitative and qualitative strategies in such a sequential way. In Stage One a survey was used in order to gain an overview of population trends for LBP in the Gaza Strip, and also in this stage, physiotherapists were questioned about their attitudes to management of LBP. In Stage Two, focus groups were used to enhance the data and gain a clearer picture of key aspects of LBP from the point of view of both physiotherapists and patients in the Gaza Strip. Both quantitative and qualitative data gained from this study were complementary to each other and have contributed to describe a holistic picture of the problem of LBP and its physiotherapy management in the Gaza Strip.
3.3 Quantitative research

Quantitative research approaches used in this study aimed to examine two issues. The first was to investigate the epidemiological features of the problem of LBP in the Gaza Strip. The second was to describe the attitudes, beliefs and recommendations of physiotherapists about the management of LBP in the Gaza Strip. The researcher used a population-based telephone survey to identify the prevalence of LBP and its determinants in the Gaza Strip. Physiotherapists’ attitudes, beliefs and recommendations were measured by two questionnaires based on Likert-type scales.

3.3.1 The survey

The survey is considered to be the broadest category of non-experimental design in quantitative research (LoBiondo-Wood and Haber, 2002). It has been used in many settings; to interview perspective employees, interview patients and study markets, politics and social events. Surveys can be classified as descriptive, exploratory or comparative. They collect detailed descriptions of existing variables and use the data to justify and assess current conditions and practices or to make plans for improving health care practices. Surveys have been used in epidemiological studies of the prevalence of LBP worldwide (Raspe, 1993; Shekelle, 1997; Waddell, 1998) and it is clear that this is an approach that is suitable for the collection of epidemiological data in Gaza. Surveys allow researchers to sample many respondents, measure many variables, test multiple hypotheses and infer temporal order from questions about past behaviour, experiences or characteristics. Survey researchers conceptualise and operationalize variables as questions. Data from surveys can be collected by questionnaire, directly or by mail, and face-to-face or telephone interview. These characteristics of the survey method were felt to be appropriate for meeting some of the objectives of the research in Gaza.

Participants in a survey often have information that can be obtained only from them. Such questions may be asked orally by a researcher in person or over the telephone in an interview or they may be asked in written form. Both interviews and questionnaires have the purpose of asking participants to report data for themselves but each has
advantages and disadvantages. Questionnaires can be given directly to respondents or by mail to respondents who read the instructions and questions, then record their answers. The cost of postal surveys is low and they can be conducted by a single researcher. The respondent completes the questionnaire when it is convenient and can check personal records if necessary. Postal questionnaires offer anonymity and avoid interviewer bias. The biggest problem seems to be low response rates (Oppenheim 1992; Hicks 2004). Sending non-respondents reminder letters can raise response rates, but adds to the time and cost of data collection. In addition, a researcher cannot control the conditions under which a postal questionnaire is completed. Also, researchers cannot observe the respondent’s reactions to questions and questionnaires mailed to illiterate respondents are not likely to be returned.

The researcher wished to conduct a survey of the Gazan population in June, July and August 2004. At that time, the Gaza Strip was divided into two parts by Israeli military policies and travel between the districts of the Gaza Strip was restricted. In addition, street maps of the Gaza Strip were not available and postal services were limited and unreliable. The use of a paper survey was further complicated by the fact that people in the Gaza Strip were unfamiliar with questionnaire completion and it was anticipated that a proportion of them were likely to be illiterate. All these factors led to the decision that a paper questionnaire had a high chance of failure and that telephone interviews were likely to be the best possible method to reach about 95% of the population in the Gaza Strip.

Given this situation, the researcher chose to investigate the prevalence of LBP by a structured interview over the telephone. Telephone interview offers some advantages over questionnaires (LoBiondo-Wood and Haber, 2002) because the response rate is almost always higher, which reduces bias in the sample. Respondents are less likely to hang up the telephone than to throw away a questionnaire (LoBiondo-Wood and Haber, 2002). Additionally, people who are blind or illiterate cannot fill out a questionnaire without help, but could participate in a telephone interview. As stated in Chapter 2 a high proportion of the population of Gaza is illiterate or has low levels of literacy so the interview had obvious advantages. With an interview, the interviewer knows who is giving the answer, can control the sequence of questions and can use some probe questions. This again was likely to prove advantageous in a population
who were not familiar with the concept of data collection. Whilst the researcher was aware that telephone interviews were more expensive than postal questionnaires, the short distances in the Gaza Strip would keep telephone costs down. The literature showed that interviews require time and training of interviewers which may result in interviewer bias if the researcher has a fixed amount of time and money. This was taken into account and every effort made to ensure that the Gazan team were properly prepared before commencing the telephone interviews. The following sections describe the role of the interviewer and the efforts made in this study to ensure well prepared interviewers.

3.3.1.1 The role of the interviewer

Survey research interviewing is considered to be a specialised kind of interviewing. As with most interviewing, its goal is to gather accurate information from another person (Auster, 1985). It is a social interaction between two strangers with the explicit purpose of one person obtaining specific information from the other. Information obtained from a structured conversation in a survey interview differs from ordinary conversation, as will be mentioned in the following paragraphs.

Many respondents are unaware of their role in the conversation in a survey and often do not have a clear idea of what is expected of them (Turner and Martin, 1984). As a result, they substitute another role that may affect their responses, such as viewing the interview as a test situation or a therapy session. Even in a well-designed professional survey, follow up research has found that only about half of the respondents understand questions exactly as intended by researchers (Ayella, 1993). In the current study, the researcher used a structured questionnaire, followed translation and back translation method and provided training for interviewers.

Interviewers need to obtain cooperation and to build up rapport, as they encroach on the respondents' time and privacy for information that may not directly benefit the respondents (LoBiondo-Wood and Haber, 2002). There may be a need to reduce embarrassment, fear and suspicion so that respondents feel comfortable revealing information. Researchers need to explain the nature and aims of the survey and may
need to give hints about social behaviour appropriate in an interview. Survey interviewers need to monitor the pace and direction of the social interaction as well as the content of answers and the behaviour of respondents. Training of interviewers for the telephone survey included asking clear questions and maintaining a balance between remaining objective, whilst providing support to those being surveyed.

Cannell and Kahn (1968) suggest that good survey interviewers are non-judgmental and do not reveal their opinions or feelings, verbally or nonverbally. The researcher needs to define the situation and ensure that respondents have the information sought, understand what is expected, give relevant answers, are motivated to cooperate and give serious answers. Researchers are aware that an interview is a social interaction in which the behaviour of both interviewer and respondents stems from their attitudes, motives, expectations and perceptions. In this survey, the researcher took these points into account throughout preparation and conduct of the survey. He selected Gazan interviewers, who were familiar with the social backgrounds of the participants, and of both genders, so that any constraints caused by speaking to someone of a different gender, could be avoided. The researcher trained the interviewers, using workshops and mock interviews to address all the issues raised in the literature mentioned in this section. Details of this training are included in the next section.

3.3.1.2 Training interviewers

Babbie (1998) suggests that a population-based survey may require many interviewers. A professional-quality interview is thought to require the careful selection of interviewers and good training. Good interviewer characteristics are considered to be pleasantness, honesty, accuracy, maturity, responsibility, stability and motivation (Neuman 2003). Additional considerations for telephone interviews are interviewers' age, sex, race, language and voice. Oksenberg et al., (1986) found fewer refusals for interviewers whose voice had higher pitch and greater pitch variation and who spoke louder, faster, with clear pronunciation and sounded pleasant and cheerful. Although these factors were observed in western cultures it was not known if they would be relevant in Gaza and the researcher felt it would be wise to highlight them in the training of the interviewers. The researcher also examined these
issues during mock interviews and pilot testing of this survey (details are in Chapter 4).

To improve researcher skills in interviewing, Oppenheim (1992) recommended that training should include observation of trained interviewers, role play, critique of mock interviews and practice interviews. He suggests that potential interviewers need to become familiar with the questionnaire and the purpose of the questions asked. Interviewers initially may need help with calls, monitoring time, collecting completed questionnaires, response rates and obtaining cooperation. The trainer, who may be the main researcher, may share in interviewing or may re-interview small sub-samples, analyse answers or observe interviews to see whether interviewers are accurately asking questions and recording answers. In this study, the researcher practised interviewing with two other interviewers and discussed all the issues mentioned in the literature in this section in the light of Gazan culture. The researcher was one of the interviewing team and used to meet with the team everyday to collect completed questionnaires and to discuss these issues. In addition, he used to visit the team occasionally to observe interviews.

3.3.1.3 Interviewer bias

Neuman (2003) suggested that interviewer bias can be caused by unintentional or intentional errors by the interviewer, errors by the respondent or the social setting in which the interview takes place. Unintentional errors by interviewers include contacting the wrong respondent, misreading a question, omitting questions, reading questions in the wrong order, recording the wrong answer to a question or misunderstanding the respondent. Intentional errors by the interviewer include purposeful alteration of answers, omission or rewording of questions or selection of alternative respondents. Other factors such as failure of an interviewer to probe or inability to probe properly and interviewer’s expectations about respondent answers based on the respondent’s social status or other answers. Respondent’s answers can be influenced by the interviewer’s tone, attitude and reaction to answers or comments made outside the interview schedule. Errors by the respondent include forgetting, embarrassment, misunderstanding or not speaking the truth because of the presence of
others. All these factors can contribute to interview and interviewer bias. These issues were evaluated through analysis of the pilot study of the survey and caution was taken during the conduction of the survey to keep researchers neutral. During the pilot study, the researchers noted that changes in researcher's tone led to changes in answers of some respondents. The interviewers made every effort to keep constant tone through the interview.

3.3.1.4 Cultural meaning and survey interviews

Research into survey errors and interview bias has raised questions about how people create social meaning and achieve cultural understanding (Bailey, 1984). Survey researchers face problems when the same words have different meanings and implications depending on the social situation, who speaks them, how they are spoken and the social distance between the speaker and listener. Also, respondents who do not understand the social situation of the survey interview may misinterpret the nature of survey research and may seek clues for how to answer the questions. As the interview itself is distinct from other settings in which attitudes are expressed, survey researchers should not expect to find complete congruence between attitudes expressed in interviews and in other social contexts (Bailey, 1986). To prevent cultural bias in this study, the interviewers were experienced Palestinian health professionals and participants had an opportunity to be interviewed by an interviewer of the same gender. In addition, interview training, mock interviews and the pilot study carried out contributed to prevent cultural bias in this survey.

During data collection of the prevalence of LBP study in the Gaza Strip, the researcher and interviewers observed the importance of discussion about the meaning of questions in the survey. Some respondents asked for explanations for certain questions, some told stories instead of giving direct answers and others asked for treatment for their LBP. It became clear that discussion of respondents' questions had motivated respondents and enhanced their responses. In these circumstances, efforts to avoid bias were made by explaining the objectives of the survey and interviewers' returning the focus to the questions of the survey, after discussion and stories had been told.
3.3.2 Likert-type Questionnaires

Likert-type scale questionnaires were used in this study to investigate physiotherapists’ attitudes, beliefs and recommendations for management of LBP. The use of scales in attitude measurement has been well established for several decades. Likert’s original work was in 1932 (Likert, 1932) and his work is still used in the present (Hicks, 2004).

Likert-type scales are lists of statements to which the subject responds. The respondent indicates his/her opinion with each statement on an intensity scale. Measurement scales provide numerical scores which can be used to compare individuals and groups. A Likert-type scale aims to place subjects on an attitude continuum for each statement by providing five score options ranging between strongly agree to strongly disagree. Some researchers have used a seven point scale rather than the more usual five-point index, however, it has been suggested that the use of a neutral central category (in either 5-point or 7-point scales) may create problems because it often is the most frequent response and is difficult to interpret (LoBiondo-Wood and Haber, 2002; Oppenheim, 1992). It was not known which scale is best to be used in Gaza.

The Likert scale is considered to be highly reliable when it comes to a “rough” ordering of people with regard to a particular attitude or attitude complex (Miller and Salkind, 2002). This is partly because of the greater range of answers permitted to respondents in which a reliability coefficient of 0.85 is often achieved. Good reliability and correlation of the Likert scale has helped to make it the most popular scaling procedure in use today (Hicks, 2004).

Whilst the literature has indicated that Likert scales have been used in studies in Arabic culture, there is no evidence that they have been used in Gaza or that their reliability has been tested when used with Arab participants. Neither have any studies been undertaken to determine whether a 5 or 7 point scale might be best to use with
participants from Gaza. In favour of using a Likert Scale is the fact that all physiotherapy education in Palestine universities contains an introduction to research methodology and so it was felt reasonable to conclude that Gazan physiotherapists would be familiar with Likert Scales. It was therefore decided to use a Likert questionnaire to explore the beliefs of physiotherapists about the problem of LBP and its management. The data would be analyzed by computing the total score of the subject's responses. Statistical analysis of responses would allow the researcher to draw conclusions about the attitudes and beliefs of the Palestinian physiotherapists about the management of LBP in the Gaza Strip. Moreover, results of the questionnaires would provide the researcher with issues to discuss in more detail in the "Stage Two" focus groups which considered the physiotherapy used in Gaza.

3.4 Qualitative research

In Stage One, the researcher collected quantitative data on the prevalence rates of LBP and physiotherapists' opinion about the problem. In stage Two, the researcher used qualitative research strategies to investigate the experiences of physiotherapists and patients about current physiotherapy and the factors influencing its outcome in patients with LBP.

Qualitative research seeks to describe how individuals perceive their experiences within specific cultural and social contexts (Portney and Watkins, 1993). Qualitative methodology uses the participant's words to generate data and answer inquiries related to understanding, explanation or development of theory about an observed situation. Qualitative research often involves in-depth open-ended interviews, direct observation and written documents. Interviews yield direct quotations from people about their experiences, opinions, feelings and knowledge. In qualitative research, the findings are complex and rich (LoBiondo-Wood and Haber, 2002) and usually take the form of narrative descriptions or lengthy explanations. Due to these reasons, it was thought appropriate to use qualitative research strategies for the exploration of physiotherapists' views about the management of, and patients' experience of LBP in Gaza.
Studies conducted in Stage Two employed ethnographic and phenomenological procedures to collect and analyse data. These procedures aimed to investigate current physiotherapy provided for patients with LBP, experiences of physiotherapists and patients, and the interaction of physiotherapists and LBP patients in the Gaza Strip. The researcher collected these data by focus groups with physiotherapists and patients with LBP. Individual interviews and observations were not chosen because the researcher believed that the focus groups would stimulate discussion and interactions that would provide richer data than individual interviews and observation on the views and experiences of the participants. The following section discusses the rationale for focus group procedure and how they were used in this study.

3.4.1 Focus groups

Focus groups are often advocated in relation to research concerning aspects of consumer satisfaction and quality assurance in health care (Myers and MacNaghten 2001). A focus group is a group interview – centered on a specific topic (focus) and facilitated and coordinated by a moderator or facilitator. The current study used groups of physiotherapists and patients to gain an in-depth understanding of feelings and experiences about current physiotherapy of LBP and its outcome. These focus groups were used to expand and enrich quantitative data gathered in this thesis.

The current study used focus groups of physiotherapists and patients, discussions were facilitated by the researcher and other trained facilitators. The design of the focus group studies includes sample selection, the questions asked, how they are phrased, and how they are posed. Each of these factors could affect the answers obtained from participants and even with highly trained researchers, it would be safe to say that in focus groups, researchers are not detached observers but always participants (Creswell 2007; Bernard and Ryan 2010).

Four focus groups of physiotherapists and patients (two groups of physiotherapists and two groups of patients) were used. Because of the difference in the social roles in Gaza, participants were placed in same gender focus groups. Participants were recruited from the five districts of the Gaza Strip. Gathering participants from all
districts of the Gaza Strip at that time where Gaza was separated by many Israeli check points was a very difficult job. It has been pointed out that focus groups should consist of six to twelve participants (Morgan 1996; Krueger 1998). Fewer than six participants tends to limit the conversation, because there is not enough diversity to spark energy and creativity. A group larger than twelve gets to be unwieldy, and voices get lost. This study used groups of 7, 8, 6 & 5 members and included data only from 2 groups of physiotherapists and 2 groups of patients. The number of participants (especially the group of 5) and the number of groups look fewer than appropriate to be a representative sample of the physiotherapists and patients with LBP in the Gaza Strip. Thus the data obtained from the focus groups were not necessarily representative of the whole population. To avoid this limitation, Hyden and Bulow (2003) and Lehoux et al., (2006) recommended that organizing many focus groups would sample different subpopulations and increase the obtained the benefits of the survey. This increases the total number of respondents, and allows homogeneous sub-categories of individuals within a wider population to be studied, in retrospect the current study would have benefitted from more focus groups. The two groups of physiotherapists (one female group and one male group) used in this study were recruited from five districts of the Gaza Strip. Similarly two groups of patients with LBP were recruited to cover different aspects of LBP and its management. Each district of the Gaza Strip was represented by approximately one physiotherapist and one patient of each gender. Thus data obtained from these focus groups would not represent subpopulations of the Gaza Strip. Because of timing and difficulties faced throughout recruitment of participants, sampling did not continue to a point of saturation. If the study were to be repeated, this is an aspect that would be reviewed.

Focus groups answer questions on a specific topic which can lead to new ideas being generated (Silverman 2005). The aims of focus groups should be clear and specific and questions should be developed and tested with emphasis that the data obtained should achieve the purposes of the study. The number of questions should be limited to the time allocated to the focus group. In this study the questions for discussion were focused on physiotherapy practice and the experiences of patients with LBP. The more defined the objective the easier the rest of the process. Focus groups conducted in this thesis aimed to examine the quality of physiotherapy provided for patients with LBP and the satisfaction of its providers and consumers with the
intention of identifying the factors influencing this therapeutic process. Questions of focus groups were selected by the researcher and supervisors of the study. Before conducting the focus groups in Gaza, the researcher examined these questions by conducting two focus groups with physiotherapy teachers from the School of Health Professions / University of Brighton in Eastbourne which contributed to development of the final version of questions (Expert Panel).

In addition, the researcher may include one or two introductory or warm-up questions and then move to the more serious questions that get at the heart of the purpose (Kress and Shoffner 2007). To be effective, focus group questions should be open-ended and move from the general to the specific. The study used open ended questions and began with introductory questions:

**Questions to physiotherapists:**

1. Let us make a start by asking everyone to introduce him/herself, how many years of experience have you had in the treatment of LBP and what methods you use in the treatment of LBP?

2. In your opinion, is treatment of patients with LBP motivating and enjoyable? .......... *Why? Why not?*

**Questions to patients:**

1. You all have experienced low back pain. Would everyone tell us when and how has the problem started, developed and what treatments have you received?

2. How did you feel when you first developed low back pain?

Questions moved from the general to the specific and were estimated to be covered in approximately two hours, the time estimated for each interview. Control over a group can be a challenge for the researcher, and thus, time can be lost on issues irrelevant to the topic (Myers and MacNaghten 2001). The researcher and facilitators made every effort needed to keep focusing on topics discussed.

Focus group studies should continue until saturation is achieved. Saturation of data of focus group discussion refers to a point where no more (new) data can be obtained and all questions are totally discussed (Silverman 2005; Massey 2011). When generating themes from many focus groups, "saturation" is achieved when no new
themes or categories are being generated and the emerged themes reflect the information needed and aims of the study. When subsequent groups appear to add little insight to the findings of previous groups, a point of "saturation" can be assumed to have been reached (Hyden and Bulow 2003), and no further groups are necessary.

However, two focus groups for one study were not adequate to achieve data saturation and the number of participants in the patient focus groups was smaller than needed. Saturation of data obtained from these groups might not have been achieved and findings might be incomplete. Some participants who were invited did not attend without giving previous notice. The researcher faced problems throughout the recruitment of participants due to closures and road check points between the districts of the Gaza Strip at the time of data collection. Moreover, the researcher had limited time to spend in Gaza for data collection. Overall, the data obtained from the focus groups described perspectives of physiotherapists and patients about the factors that affected provision of physiotherapy and its outcome in patients with LBP. These factors included the relationships between patients and their physiotherapists and doctors. They also included the effect of communication and the lack of information given to patients on progress of the condition. In addition, data obtained from focus groups identified cultural and social behaviours that impacted on physiotherapists' clinical behaviour. Other themes may have emerged if more focus groups had been conducted and saturation achieved, however the results pave the way for further research in the Gaza Strip. Data obtained from each of the four studies conducted in this thesis provided preliminary data that contributed to achievement of the aims of the study.

The focus group data are tough to analyze because the talking is in reaction to the comments of other members and groups are quite variable and can be tough to get together (Hyden and Bulow 2003). Therefore, the researcher and facilitator need to be highly trained. Data obtained from focus groups employed in this thesis were analyzed systematically using an approach that allowed the researcher to generate themes that matched aims of the study. Analysis of focus group data relies on the identification and refinement of themes and subcategories. The main challenge to this process lies in being systematic and thorough and moving from the descriptive to the
analytic as the researcher attempts to provide an explanation for the patterns identified in the data. The purpose of the study, the information gained from questions asked and the type and scope of reporting guided the analytical process and the themes generated. However with analysis of focus groups, it would be difficult to deny the effect of uncertainty, that is, the researcher depends on answers to questions that could be affected by the method of questioning. All these issues could limit generalization of findings of the current study.

In conclusion, use of both patient focus groups and physiotherapist focus groups in the current study had some limitations and some advantages. The intention of conducting this study was to add insights to previous studies and to obtain a holistic picture about LBP and its management in the Gaza Strip. The four studies conducted in this research project were complementary to each other and data obtained from each study provided results that contributed to achievement of objectives of the study, although the limitations of the data must be recognized.

3.4.2. The role of the researcher as interviewer

Literature on qualitative research and focus groups has highlighted that at the beginning of the focus group, participants in the group look to the researcher for direction (Miller and Salkind, 2002; Neuman, 2003). There appears to be no evidence that the position of the researcher has been addressed in Arabic studies. The study in Gaza was the first of its kind and it would be safe to suggest that participants looked to the researcher for leadership in this particular study. The researcher was conscious of his responsibility to his assistants and participants and attempted to remain as neutral as possible in data collecting and analysis.

According to Neuman (2003), the researcher provides the agenda for discussion by virtue of his/her role in the group. The researcher suggests the topic of discussion by asking a certain question, the group tend to comply. It is the researcher’s responsibility to decide how much he/she wants to direct the group and how much he needs to be flexible with the interview schedule. Some groups need little direction after the discussion has started, while others need frequent questions and attention.
This depends on whether the researcher needs specific information or whether the aim is to learn what the group thinks is important. These issues must be determined by the research agenda. Good preparation of the research agenda helps to reduce the researcher’s nervousness, maintaining his/her stability and neutral position. It gives a broad outline to the discussion, preventing it from straying into unrelated areas. In this study, the interview protocols were prepared carefully, objectives of the study were explained clearly to participants and the researcher and his assistants were aware of these issues and their impact on data collection.

In qualitative research, the researcher is the main tool through which data are collected and analysed. In focus groups, it is the researcher’s responsibility to provide adequate training to research assistants or facilitators, setting policies and procedures to be followed and making decisions during data collection and analysis, so that research assistants can cooperate and follow the research protocols. This includes clarifying and justifying the selected methods and the process of data analysis to be used (Holloway and Wheeler, 1996). Before conducting this study, the researcher organised training workshops for his assistants to ensure that they gained adequate skills in this area and understood their potential impact on participants clearly.

The researcher in this study, as an experienced male physiotherapist, invited subjects who were likely to interact within the group in order to increase understanding of the discussion and to provide new insights into the research topic. During the discussions in the focus groups, the researcher kept silent and calm, as much as he could, in order to maintain a neutral position. The researcher used female facilitators in female focus groups and male facilitators with male focus groups, as it is thought that the gender of the researcher may determine what he/she is allowed to ask or to observe. During the process of data collection, the researcher and facilitators endeavoured to remain non-judgemental and show interest in participants’ stories.

The researcher is a Palestinian man, aged fifty years. As he has grown up in Gaza, he holds similar social values and customs to those of his peers in Palestinian society. Because of this, the social characteristics of the researcher may affect his interpretation of the social and cultural data collected. To reduce the possibility of bias, the researcher used research assistants for data collection. Debate about
interpretations of data between the members of a research team is a healthy way to reduce bias in the development of themes. Additionally, the inclusion of a second researcher, familiar with qualitative data collection and analysis, helped to bring an element of validity to the findings (Silverman, 2005).

Immediately after each focus group, the researcher discussed the course of the interview with the facilitators to compare field notes about the atmosphere and conduct of the session. At the end of all interviews, the researcher and facilitators discussed preliminary interpretations of the data collected. Each focus group was tape-recorded and transcribed by the researcher and another physiotherapist, who was not a participant and had some experience in data collection.

Participants in this study were physiotherapists, and LBP patients. The researcher conducted male and female focus group interviews to gather information about the management of LBP from physiotherapists and also male and female patients with acute and chronic LBP. The researcher has twenty four years of experience as a physiotherapist and as a physiotherapy teacher in Gaza. This enabled him to make contact with patients and physiotherapists in a way that promoted collecting and interpreting findings of the study. The researcher’s professional standing in the community may have affected recruitment and data obtained, despite it being made clear that participation was voluntary. This is because some of participants were taught by the researcher which might cause sample bias.

3.5 Study methodology

As mentioned earlier in this chapter, data were collected in two sequential stages. In the first stage, the researcher investigated the prevalence of LBP in the general population in the Gaza Strip and physiotherapists’ attitudes, beliefs and recommendations for the management of LBP. In the second stage, the researcher collected qualitative data from two focus groups of physiotherapists and two focus groups of patients on current physiotherapy for LBP, factors influencing the delivery and outcome of physiotherapy and the impact of the problem on patients’ lives in the Gaza Strip.
Using combined methods in this research project, has linked the four studies which were distinct from one another at the two stages of the research process. The methods were integrated in one study surveying the size of the problem of LBP and its physiotherapy management. The linkage occurred in the analysis and writing-up stage. The data collected by the two approaches focused on the same research problem and were consistent with and integrated with one another.

3.5.1 Stage One

Flow chart 3.1 demonstrates the studies conducted and tools used in the first stage of data collection of the investigation. In this stage, the researcher collected data on the prevalence and risk factors of LBP in the Gaza Strip followed by data collection about physiotherapists' attitudes, beliefs and recommendations for physiotherapy management of LBP in the Gaza Strip. Information produced by these studies was used in the next stage of the project. It paved a way for investigating current physiotherapy and factors influencing its delivery and outcome.

3.5.1.1 The prevalence of low back pain in the Gaza Strip

The prevalence of low back pain in the Gaza Strip was investigated by a telephone population survey. A randomised sample of 502 telephone numbers was selected from the total population based on the geographical distribution of the Gaza Strip. The researcher and two research assistants telephoned the sample and interviewed participants who agreed to take part in the study. As recommended by Oppenheim (1992), the researcher explained to research assistants the objectives of the survey and provided them with adequate training for interviewing. Four hundred and twenty two houses including 1538 adults aged 18 years and over agreed to participate in the study.

In this survey, a structured questionnaire was used to collect information on the incidence, epidemiology and the economic costs of LBP in the Gaza Strip. This questionnaire was an amended copy of the questionnaire that was used in the
Omnibus Survey in the United Kingdom in 1993 (Mason, 1994). There were other questionnaires that could be used for investigating the prevalence of LBP but they were either longitudinal (e.g., The South Manchester Study (Croft et al., 1994) or designed for specific purposes such as labour demands and measures of LBP disability (e.g., Oswestry Questionnaire, Fairbank et al., 1980).

The Omnibus Survey was considered to be appropriate for this study as no such instrument had been developed and used in Arabic society that focussed on the general population, including questions that could provide statistical data and information required for clinical practice. Although developed for use in western society, the researcher considered it could have been usefully employed in the Gaza Strip. This questionnaire was considered to be consistent and reliable because the questions asked are presented in exactly the same way, every time, to every participant (Mason 1994). The questionnaire needed amending because of the need to translate questions into the Arabic language and also the need to adapt questions to Arabic culture.

Amendment of the questionnaire included additional of questions related to number of persons living in the house, marital status and associated pain with LBP. Changes in the arrangement of the questions and wording of some sentences were made for clarification and to permit the dialogue to flow naturally from one question to another in the Arabic language. The amended questionnaire was initially developed in English and then translated into the Arabic language, using a recognised back translation method (Oppenheim, 1992). The researcher was aware that, as the survey was developed in England and written in English, there were issues of validity to do with its translation into another language and use in another culture. To this end, apart from the issues mentioned above, the amended survey remained as close as possible to the format of the original survey.

To improve the validity of the questionnaire, translation and back translation were carried out by local experienced translators (Oppenheim, 1992). The revised questionnaire was piloted on a sample of eleven subjects from the target population by the researcher and his assistants. Details about results of the pilot study and validity of the questionnaire are described in the next chapter.
Data were collected over a period of 12 weeks. Completed questionnaires were collected by the researcher and were kept safe in a special cabinet accessible only to the researcher. The quantitative method used in this study provided the researcher with statistics about the prevalence rates and their relationships with the socio-demographic characteristics of the study sample. The general term "low back pain" was used in this study because it was felt that the term "non-specific low back pain" might cause confusion to subjects of the sample. This study is described in Chapter 4.

3.5.1.2 Physiotherapists’ attitudes, beliefs and recommendations for back pain

This study aimed to investigate how physiotherapists in the Gaza Strip deal with patients with LBP and what recommendations they offer to them regarding physical daily activities. For this purpose, the researcher recruited a sample of physiotherapists with at least three years experience in treatment of patients with LBP. Each subject in the sample was asked to complete two questionnaires, Physiotherapist Attitude and Beliefs Scale (PABS) and Occupational and Domestic Activities of Patients with LBP (ODAP). The PABS questionnaire has been described by Ostelo et al., (2003) as PABS-PT (Pain Attitudes and Beliefs Scale for Physiotherapists) and consists of 65 statements and three case studies scored on a six-point Likert scale. This questionnaire was developed by Ostelo, et al., (2003) and has been used in the Netherlands and the UK (Ostelo et al., 2003). The researcher was given permission to use the questionnaire and translate it into the Arabic language. The ODAP questionnaire was based on recommendations by Ostelo et al., (2003) and further developed and piloted by the researcher for use in Gaza. It consisted of 39 photographs showing individuals in different positions involved in work and domestic activities. Physiotherapists were asked to rate positions and activities as suitable or unsuitable for patients with LBP as portrayed in photographs, scored on a seven-point Likert scale.

The PABS-PT questionnaire was chosen because it was designed to examine physiotherapist attitude and beliefs about LBP and its management which is one
objective of this project. It is considered to be valid and reliable (Ostelo et al., 2003; Houben et al., 2005) in societies for which it was developed, but it is not known if it is valid in Gaza. As with the prevalence survey previously mentioned, there are no instruments developed for use in Arabic society. For this reason, it was decided that the PABS-PT questionnaire was suitable for adaptation for use in the Gaza Strip. The questionnaire was translated into Arabic language using a recognised back translation method to improve its validity. It also was piloted before conducting the study.

The ODAP questionnaire was used to support the validity of the PABS-PT questionnaire and to provide information about advice and recommendations given to patients in the Gaza Strip received from their physiotherapists, as recommended by Ostelo et al., (2003). Items of this questionnaire were selected by patients and physiotherapists as common daily physical activities in Gaza and of concern to patients with LBP. Details about steps made to enhance validity of this questionnaire are described in Chapter Five.

3.5.2 Stage Two

In this stage, two studies were conducted. Data were obtained from two physiotherapist focus groups and two patient focus groups. Through focus group discussion, participant interaction explored the views and experiences of participants about current physiotherapy, factors influencing the management of LBP, influence of the problem on patients and physiotherapists with possible explanations for these views.

3.5.2.1 Physiotherapists’ views about management of low back pain

This study sought to explore the provision of physiotherapy for patients with LBP and to survey the factors that influenced the delivery and outcomes of physiotherapy in patients with LBP. Among these factors, culture was expected to be a dominant factor in this process. Therefore, as described by Krueger and Casey (2000) and Neuman (2003), it was decided to employ ethnographic focus groups of experienced physiotherapists to obtain data on current physiotherapeutic process and socio-cultural implications for the management of LBP in the Gaza Strip.
Ethnographic methodology has been used for inclusive studies of cultures and people (Portney and Watkins, 1993). Bloor (2007) suggests that the ethnographic approach focuses on the culture or subculture of patients and health professionals and Dixon-Woods (2003) indicates that the value of ethnography lies in the holistic perspectives of participants to problems and issues. Ethnographic research might challenge or confirm existing professional beliefs and change or follow long-standing practices. It is also useful for an understanding of the structures and organisation of healthcare and for exploration of the interaction between clients and professionals (Savage, 2006) and thus was considered appropriate for this study.

The researcher conducted two focus groups with experienced physiotherapists, one male group and one female group. The researcher used focus group facilitators of the same gender as the participants in each group. Before conducting the study, the researcher explained the objectives of the study and facilitators' role in the study. Groups discussed current physiotherapeutic process and the impact of professional, social, religious and cultural factors that could be possible barriers or facilitators of physiotherapy outcomes for patients with LBP. This study is presented in Chapter Six.

3.5.2.2 Experiences of patients with low back pain

In this study, the researcher considered that phenomenological qualitative research methods were appropriate to investigate the experiences of patients with LBP in the Gaza Strip. Searching experiences of patients sought to provide this research project with insights into the factors influencing the progress of LBP in relation to its management in the Gaza Strip. To achieve this purpose, interpretative approaches were used in this study. These approaches aim for understanding the progress of LBP in relation to its management, rather than explanation of this phenomenon. The selection of these approaches allowed the researcher to utilize the knowledge embedded in experience from a study conducted in a natural, uncontrolled setting.

Phenomenology is an interpretive approach which has provided the methodological structure for an increasing number of studies in areas of health and illness.
(Langdridge, 2007). However, phenomenology is not only a research approach; it is fundamentally a philosophy with both epistemological and ontological branches influencing knowledge development throughout its evolution in the twentieth century (Langdridge, 2007). The philosopher Martin Heidegger (1889-1976) introduced interpretation as both a concept and method of phenomenology (Heidegger, 1962). He referred to phenomenology which seeks to uncover understanding of the meaning of being as "hermeneutic", designating it an interpretative rather than descriptive process (Heidegger 1962). This philosophy allows the researcher to seek for understanding of the meaning of being, rather than for what can be known. The German philosopher Edmund Husserl (1859-1938) believed in the phenomenologist's intuitive understanding of human experience. He developed the concepts of intuition, essence, phenomenological reduction and intersubjectivity. Husserl's emphasis was on revealing what he called the "essence" of phenomenon which exist independently of conscious experience, but could only be known through examination of such experience (Husserl, 1970). Thus, this study sought answers to questions about LBP and its management and the issues within it, rather than its existence or being. These philosophical ideas will lead researchers to ask questions, explain concepts and undertake analysis from an epistemological perspective.

Phenomenology as a philosophical approach with both the epistemological and ontological branches has provided a basis for qualitative research, particularly in the areas of health and illness. Philosophy determines the appropriateness of methodological processes for research and guides the researcher's approach to data analysis. It determines the relevance of various issues and concepts to the research topic and the way in which the discussion is presented. Phenomenological data collection and data analysis allow the researcher to understand social phenomena in natural setting, whilst emphasizing participants' meanings, experiences and views (Pope and Mays, 2000; MacDermott, 2002). This approach is useful for exploring poorly understood areas (LoBiondo-Wood and Haber, 2002), such as patient experience of LBP. Utilization of an interpretative approach requires the researcher to accept and value the descriptions given by the participants as their reality, their understanding of the phenomenon (Larkin et al., 2006).
A key element for utilizing qualitative methods in this study was the concept of culture and the ways in which culture affects the context of the problem of LBP. Thus, the researcher approached two groups of LBP sufferers and sought to find answers to questions about the treatments they received with the perspective that they need to define the specific and localized issues related to these patients. Physiotherapy practice aims to address patients' physical impairments and seeks to maximize their participation and integration into the community (CSP, 2006). Also, the literature indicates that qualitative evidence is gradually increasing to support the use of various treatment strategies in the management of LBP (NICE, 2009). Moreover, Gibson and Helme (2000) suggested that research in the field should include an understanding of the patient's experience as well as questions related to their specific impairment. In line with the literature and the purpose of the current study, it can be argued that the qualitative approach used in this study and a phenomenological approach with its both epistemological and ontological components are consistent.

Phenomenology seeks to gain descriptions through interpretation from the insider's subjective description. The data of phenomenological research are the lived experience of participants. This experience is captured in in-depth interviews which contain descriptions of experience (Kvale, 2007). In this study a focus group technique was used to explore the subjective experiences of patients who had experienced LBP and received physiotherapy program. The selection of this method of data collection was because it enables individual members of a group to interact with each other, and eventually lead the discussion, thus enhancing the breadth and depth of data produced. It was anticipated that contextual and structural issues related to the objectives of the study would be illuminated through identification of predominant or important themes within participants' responses, thus increasing understanding of the issues faced by patients with LBP throughout their journey with their pain and the impact of their pain on different aspects of their lives.

The researcher in this study ran two focus groups (one male group and one female group) with patients with acute and chronic LBP. Participants were asked about their satisfaction with the medical and physiotherapy management provided for them, influences of pain on their lives and their strategies for coping with their pain. Group interaction among participants had the potential for greater insights into patients'
experience to develop. Details of procedures and study analysis are provided in Chapter Seven.

3.6 Ethical considerations

As data collection took place in the Gaza Strip, the researcher obtained permission from the Palestinian Authority to conduct the research (Appendix 1). The study was approved by the School Ethics Panel, School of Health Professions, University of Brighton Appendices 2 and 3). Permission was obtained from Dr. Raymond Ostelo (authors of PABS-PT) to use the PABS in this study (Appendices 4 and 5). Telephone interviewees gave verbal consent and patients and physiotherapists who agreed to participate received a participant information sheet about the research project (Appendices 6 and 7) and signed a consent form before starting the process of data collection (Appendices 8 and 9).

The researcher is a man, 50 years old and well known as a physiotherapy teacher among physiotherapists in the Gaza Strip. The potential advantages and disadvantages of the researcher's status have been considered in all stages of data collection and analysis.

Study one involved one female and two male interviewers for participants who were more comfortable being interviewed by a same gender interviewer. Telephone interviewees were allocated codes, based on their telephone number. In study two, the researcher explained clearly to participants that their participation was voluntary and asked participants who were willing to complete the questionnaires to give them back to the head of the physiotherapy department to give greater anonymity and avoid embarrassment involved in returning questionnaires directly to the researcher. In study three, the researcher made it clear, during recruitment and in the focus group setting, that participation was voluntary and acknowledged information provided by every participant. For social considerations, the researcher also used same-gender facilitators in each group. In study four, the researcher selected participants randomly from lists of patients provided by heads of physiotherapy departments in the five districts of the Gaza Strip. Participants were provided with information sheet and
signed the required informed consent prior to participation in focus groups. At the end of telephone data collection, only 11 female participants, out of 213, asked to be interviewed by female interviewer and 8 house respondents asked us to call back when husbands were at home. Data obtained from the female physiotherapist group were similar and consistent with the data obtained from the male physiotherapist group which indicated that participants were enthusiastic to take part in the study and their participation was voluntary. Moreover, all patients, both male and female spoke about their pain freely and openly in focus groups.

3.7 Confidentiality

All data collected were locked in filing cabinets in the researcher’s home and kept on a password-protected computer, to which only the researcher had access to identifying details. All questionnaires, tapes and transcripts were coded to ensure anonymity.

3.8 Data analysis

Data obtained from each study in the investigation were analysed independently. Details about analysis approaches and statistics used in each study are presented in the context of each study and can be found in Chapters Four to Seven.

Quantitative data were analysed by statistical analysis while qualitative data were analysed using thematic content analysis and findings of data sets were integrated to draw conclusions. In this study, each approach was used in relation to a different aspect of the research problem. Therefore, data sets were complementary rather than consistent and were understood in relation to the purposes of the study.

3.9 Summary

This chapter has described and justified the research methodologies and data collection and analysis methods employed. Studies conducted in this research were discussed in relation to their objectives and methods. The next chapter describes the
first part of the research study, which investigated the prevalence of low back pain in the Gaza Strip.
Chapter Four

The Prevalence of Low Back Pain in the Gaza Strip

4.1 Introduction

This chapter will set the prevalence study done in Gaza within a world context, explain how prevalence data has been collected in other studies and justify the choice of method of data collection used in Gaza. Finally the implementation of the Gazan prevalence study in Stage One of the research will be reported and results described.

Accurate prevalence estimates are considered to be helpful in assessing the impact of LBP in the general population and also may serve as a basis for aetiological studies and health care evaluation (Papageorgiou et al., 1995). Although LBP may be common to all societies, indications are that its prevalence differs in different societies and cultures (Waddell and Waddell, 2000). Several studies have investigated the prevalence of LBP and its risk factors in many countries, most of which are from North America and Europe (Waddell, 2004; Chopra and Abdel-Nasser, 2008). Epidemiological studies demonstrated that LBP affects between 58% and 84% of all adults at some point in their life (Andersson et al., 1991; Dionne, 1999). There is considerably less information about the magnitude and impact of LBP in developing countries (Chopra and Abdel-Nasser, 2008) and no evidence that the epidemiology of LBP has been studied in any Arabic countries in the Middle East. The research reported in this thesis aimed to investigate the prevalence of LBP in a particular Arabic population in the Gaza Strip and the association between socio-demographic variables and development of LBP there.

As stated in Chapter One, this research project focused mainly on NSLBP, but in Stage One the researcher investigated the prevalence of all types of LBP in the general population in the Gaza Strip. The reason for not specifying NSLBP was the stated aim to describe the size of the problem of LBP as baseline data for Gaza. Also the researcher considered that the general population in Gaza would be unable to
recognise differences between specific and non-specific LBP. Consequently, in the survey, reported in this chapter, participants were asked about the general term "low back pain", earlier defined as pain felt in the lower back, below the costal margin and above the inferior gluteal folds, with or without leg pain (sciatica), but expressed to the participants in lay terms.

During the last fifty years, the Palestinian population has been exposed to a series of traumatic events including imprisonment, torture and human rights abuse, house demolitions, land confiscation and the resulting indignities of unemployment. Thousands of Palestinians were jailed and on release faced enormous social pressures as they attempted to re-integrate into both community and family life (El Sarraj et al., 1996) and many others were killed or became disabled. Qouta and El Sarraj (1993) showed that anxiety levels and psychosomatic symptoms in Gaza significantly rose after the Palestinian First Intifada (1987 – 1994). No data are currently available, but as the situation today is similar to that described above, it is likely that there are still high levels of anxiety and stress in the Gazan population.

Due to the circumstances described in the previous paragraph, the prevalence of traumatic experience and post-traumatic stress disorder appears to be high in the Gaza Strip. In a population-based study, the prevalence of traumatic experience was estimated to be 36% and post-traumatic stress disorder 19.5% (Qouta, 2000). Among patients aged between 16 and 55 years treated in primary healthcare clinics, the overall prevalence of post-traumatic symptoms was 29% and significantly higher among females than in males (Afana et al., 2002). These studies included large samples aged between 16 and 55 years (nearly the same population examined in the current study) and highlight the psychological and emotional changes in the general population in the Gaza Strip.

Many western studies have indicated an association between recurrent LBP and psychological and emotional changes (Klenerman, et al., 1995; Crombez, et al., 1999; Linton, 2001; Buer and Linton, 2002; Waddell, 2004). If this is true, then the traumatic events emanating from the long history of occupation and political violence (Afana et al., 2002) are likely to affect the prevalence of LBP in the Palestinian community, but there are currently no data available on this. According to Waddell
and Waddell (2000) cultural factors and emotional changes can have wide-ranging influences on how patients with LBP think and feel about their pain and this appears to be important for clinical management (Waddell and Waddell, 2000). It is not known if this combination of influences has similar effects in Gaza, but the researcher surmises that it may be so. Before discussing the literature further, it is appropriate to introduce epidemiological terms used in the study:

- **Prevalence** is the percentage of people in a known population who have the symptom during a particular period of time.
- **Point prevalence** is the percentage of people in a known population who have pain now, on the day of interview.
- **One-month or one-year prevalence** is the percentage of people in a known population who have pain at some time during that period.
- **Lifetime or accumulative prevalence** is the percentage of people in a known population who can remember pain at some time in their life, whether or not they have it now.
- **Incidence** is the percentage of a known population who develop new problems within a given time.

The later part of this chapter describes the epidemiology of LBP in a particular situation within the Arab Islamic culture in the Gaza Strip. This phenomenon has not been studied in this context before and it is anticipated that findings will be an important source of information for health administrators and health care providers in the planning and implementation of health policies for the management of patients with LBP. The information in this chapter may also be useful in the evaluation of the effectiveness of current health care management for LBP. In addition, it may provide a basis for preventive procedures by highlighting factors that may be important in reducing or eliminating exposure to the risk factors of the disorder. The following section provides a background to the study and the population of the Gaza Strip.
4.2 Background to the study

Although it is thought that LBP has affected human beings throughout recorded history, its definition, causes and prognosis remain obscure. The causes of LBP seem to be as numerous as the terms used by patients and health care professionals to describe the symptoms. The risk factors for LBP also appear to be multi-factorial (bio-psycho-social), in that they impact on, and affect each other. As stated earlier, cultural influences may affect awareness and reporting of symptoms. The interaction of these factors has affected the research methodologies and findings of epidemiological studies. Surveys of the prevalence of LBP have given different rates of LBP (see Table 4.1), back disability and health care usage for patients with LBP. These surveys were conducted in many countries with different, mainly western, cultures using different research methods. It is possible that differences in rates of LBP may result from cultural and societal differences or they may result from different research methods.

Surveys on the prevalence of LBP from different countries (Table 4.1) indicate that the point prevalence of LBP ranges from 12% to 33%; its one-month prevalence ranges from 19% to 43%; its one-year prevalence ranges from 27-65%; and 59-84% of people report back pain at some time in their lives (Walker, 2000). In the United Kingdom, Mason (1994) reported a point prevalence of 14% and a one-year prevalence of 37%. The South Manchester Study suggests a one-month prevalence of 39% and a lifetime prevalence of 58% (Papageorgiou et al., 1995). Similar figures were mentioned by Walsh et al. (1992) for the one-year and lifetime prevalence in the UK. Mason's Survey (1994) was cross-sectional study to investigate the prevalence rates of LBP during the previous year, reported one year after its conduction and was published by one author. The South Manchester Study was a prospective community survey to investigate patterns and predictors of back pain and health care use. Data of this study were collected through 1992-1993 and preliminary results were available by 1994 (Croft et al., 1994) but the final parts of the analysis were not published till 1999. Although this study has provided a large amount of data, a practical difficulty can be noted in data collection and the study was published under different lead authors in different places over 5 years. However, the similarities between the results
of these surveys are striking, despite the differences in the methodology and objectives of the surveys.

In the USA, the Nuprin Pain Report (Taylor and Curran, 1985) found that LBP was the second most common pain reported after headache. Fifty six percent of respondents reported at least one day of back pain in the previous year; 34% for 6 days or more and 14% for more than one month in the year. Von Korff et al. (1988) reported that 41% of American adults aged 26 and 44 years had LBP in the previous 6 months. Andersson (1997) reported that, in the USA, each year, 15-45% of people suffer LBP, and 5% of adults present to a health care professional with a new episode. Other studies from the USA have indicated that back pain is the most common cause of activity limitation in people younger than 45 years, the second most frequent reason for visits to a physician, the third most common cause of surgical procedures, the fifth-rating cause of admission to hospital, and about 2% of the US workforce are compensated for back injuries each year (Taylor and Twomey, 1994; Hart, et al., 1995). All these studies included large samples from all states of America. The studies described different aspects of LBP but findings of these studies came from different samples which may limit their generalization to the epidemiology of LBP in the USA. Recent studies on the epidemiology of LBP from the UK and USA focused on the cost of the condition (Leech, 2004) and Waddell (2004) argues that failure of the management of LBP hindered changes in its epidemiology.

A population-based survey on the prevalence and associated disability of LBP in Australian adults conducted by Walker et al. (2004) also suggested that;

- the point prevalence of LBP was estimated at 25.6%
- the one-year prevalence of LBP was 67.6%
- the lifetime prevalence of LBP was 79.2%
- 42.6% of the adult population had experienced low-intensity pain and disability from LBP in the previous six months prior to interview.

This study concluded that LBP is a common problem in the Australian adult population and over 10% of those reporting LBP had been significantly disabled during a six-month period prior to data collection. The sample used in this study
included approximately 12 million adult Australians aged 18 years or older. It was a randomized sample for age, gender and state using 1996 Australian Census weighted data supplied by the Australian Bureau of Statistics (ABS). These results suggested a difference in the rates of prevalence of LBP between USA and Australian populations, which might suggest cultural differences between the two societies impacting on the prevalence of LBP.

In most European countries, LBP is most common between the ages of 35-55 years and about 30% of European workers considered that their work caused LBP and prevalence rates from different European countries range from 13% to 44% (Andersson, 1997). Table 4.1 illustrates the prevalence of LBP in the different countries.

Table 4.1: Prevalence rates of LBP from different countries

<table>
<thead>
<tr>
<th>Survey</th>
<th>Point prevalence</th>
<th>One-month prevalence</th>
<th>Six-month prevalence</th>
<th>One-year prevalence</th>
<th>Lifetime Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>14%</td>
<td>39%</td>
<td>37%</td>
<td>58%</td>
<td></td>
</tr>
<tr>
<td>European</td>
<td></td>
<td></td>
<td>13-44%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td></td>
<td></td>
<td>56%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>26%</td>
<td>42%</td>
<td>68%</td>
<td>79%</td>
<td></td>
</tr>
<tr>
<td>Worldwide</td>
<td>12-33%</td>
<td>19-34%</td>
<td>27-65%</td>
<td>59-84%</td>
<td></td>
</tr>
</tbody>
</table>


It is difficult to compare LBP prevalence rates reported by cross-sectional surveys. This is because of the variation in time of sampling, sampling techniques used and types of questions asked. Cross-sectional studies on the prevalence of LBP presented data that range from 12% to 35%. These differences in statistics in the studies mentioned could be due to methodological issues and differences in aims rather than to actual differences between the people in the studies. This is evident from the different methods and questions used in data collection and analysis in these studies.
The South Manchester Study (SMS) and the Omnibus Survey will be discussed in more detail, as the researcher initially considered both instruments suitable to use in Gaza. The SMS was a prospective, community survey to investigate patterns and predictors of back pain and health use in an industrial city in the north of England. The study looked at 7699 adults aged between 18 and 75 years who were registered with one of two family practices. One was based in a large housing project with high social deprivation and unemployment, the other in a well-established residential area with a broad social mix. Data were collected through 1992-1993 and preliminary data results were available by 1994 (Croft et al., 1994) but the final parts of the analysis were not published until 1999. Health care use over the next 12 months was studied from medical records. Subjects who were free of back pain were followed for the next 12 months and those who were free of pain and employed at baseline of the study were subjected to more detailed assessment of work-related psychosocial factors and distress to determine potential predictors of back pain over the next 12 months (Croft et al., 1995; Macfarlane et al., 1997; Papageorgiou et al., 1997). Subjects who consulted their general practitioner were followed-up for 12 months (Croft et al., 1998) and to discover possible predictors of recovery or development of chronic back pain (Macfarlane et al., 1999; Thomas et al., 1999). Croft et al., (1997) provided an overview of the study and considered some of the conceptual issues it raised. This study gave the best evidence of the epidemiology of back pain in the UK with a large amount of data. Unfortunately the work was published under different authors in different places over a period of 5 years making it difficult to gain an overview of the questionnaire. This was partly why the SMS was not considered appropriate for use in Gaza. In addition, the Gazan study was planned to be a retrospective investigation, whereas the SMS was prospective, and therefore an inappropriate model.

The Omnibus Survey (Mason, 1994) used a cross-sectional design and aimed to find the prevalence of LBP among adults aged 16 years and over and to provide information about LBP sufferers in different parts of Great Britain in the 12 months prior to interview. In this study 6000 adults were interviewed, of whom 2200 subjects had experienced LBP during the last 12 months. Data were collected in March, April and June 1993 by the Office of Population Censuses and Surveys, Social Survey Division and results were published under Mason (1994). The questions identified
people who had experienced LBP in the 12 months prior to interview. Sufferers were asked a series of questions to establish how long they had had pain, the extent to which it had restricted their activities, in particular their employment, and whether they had consulted any of the health services about the pain over the last year. They were also asked which factors they felt were related to the initial start of their pain (see Appendix 10).

It was decided to use the questionnaire from Mason's survey (Appendix 10) to investigate the prevalence of LBP in the Gaza Strip. The following factors made this questionnaire appropriate for the Gazan study:

- The questionnaire was already validated and published.
- The survey was population-based and provided basic information about the size of the problem of LBP.
- It was cross-sectional in design and could be conducted within the time frame of the current study.
- It was retrospective.
- The determinants could be used for clinical and health administrative purposes.

Other questionnaires did not match the aim of the study, as mentioned in chapter 3, Section 3.5.1.1, because they were either longitudinal or designed to examine specific aspects of the epidemiology of LBP.

In the Mason study (1994) nearly half of the people with LBP reported that it had lasted less than four weeks in the year. However, for 19% it lasted the whole year, indicating that about 6% of all adults with LBP in the study had back symptoms more or less constantly. Mason suggested that back symptoms are one of the most common causes of chronic sickness as about 3-4% of the population aged 16-44 years and 5-7% of those aged 45-64 years reported back pain as a chronic sickness. Back pain was reported as the most common cause of chronic sickness in both men and women under the age of 45 and between ages 45-65 years. With regard to absence from work, Frank (1993) reported that UK estimates place LBP as the largest single cause of absence from work in 1988-1989, being responsible for about 12.5% of all sick days.
Although both studies were conducted in the UK, the difference found in the results may be due to the differences in methodologies used and purpose of these studies.

In epidemiological research, most studies and reviews on the prevalence and risk factors of LBP have focused on pain and work-related disability (Waddell, 2004). One major limitation of the information and figures for the prevalence of LBP involves the subjectivity of data reported on pain and disability. It also can be argued that results of research on the prevalence of LBP cannot be extrapolated worldwide, as most studies have been conducted in the most economically developed nations. Lack of research in developing countries leaves a gap in the data about LBP in low and middle income countries (Volinn, 1997). This lack of data from less developed countries inspired the researcher to undertake the research reported in this thesis in the Gaza Strip.

The literature reports that women and men have similar prevalence of LBP (Mason, 1994; Andersson, 1998; Walker et al. 2004). The incidence of LBP seems to be age-related with the highest prevalence rates in the 40-60 year age-group. Burdorf and Sorock (1997) demonstrated that most population surveys reported that women showed an increasing prevalence of LBP as they grow older while men showed peak incidence at about 40 years of age. Whilst there is no evidence for gender differences in the prevalence of LBP, many studies report a female predominance in the prevalence of musculoskeletal pain in both the general population (Andersson et al., 1993; Natving et al., 1995; Urwin et al., 1998; Bergman et al., 2001) and the working population (de Zwart et al., 2001; Eriksen, 2003; Guo et al., 2004). However, these studies do not explain the underlying reasons for these gender differences. Some researchers suggest that these differences may be due to differences in sex-linked biological factors, different pain sensitivity or differences in social or psychological factors (Punnet and Herbert, 2000; Denton et al., 2004; Strazdins and Bammer, 2004).

Age, occupation, level of independence and heavy lifting are considered to be predominant risk factors for developing LBP (Stubbs, et al., 1983; Andersson, 1997). In addition, various cross-sectional studies have indicated association between psychological factors and the occurrence of LBP (Andersson, 1997; Linton, 2000). These factors include anxiety, depression, stressful responsibility, job dissatisfaction,
mental stress at work. The experience of stress, anxiety and depression is sometimes secondary to LBP (Andersson, 1999). In the light of this, and being aware of the high stress levels in Gaza (Qouta, 2000; Afana et al., 2002), it was expected that the incidence of LBP in Gaza ought to be higher than in other countries.

In a few prospective studies, various symptoms indicating psychological distress have been suggested as predictors of the development of LBP in subjects who previously had no pain (Polatin, et al., 1993; Picavet and Schouten, 2003). It has also been shown (Andersson, 1999) that subjects of less than 45 years old report LBP as the first reason for limiting work activities. These findings support the evidence that LBP rates are higher in the working population mentioned earlier in this chapter.

Work loss is possibly the most important measure of disability from both patient and community perspectives, and data on work loss is used to measure the social and economic impact of LBP on employers, productivity, the economy and community as a whole. Work loss can be the most important epidemiological measure of LBP disability and an ultimate measure for the efficacy of healthcare (Spitzer, et al., 1987; Waddell and Burton, 2005).

Despite the importance of work loss in the assessment of LBP disability, it may be less important to clinical research than subjective clinical measures of pain, psychological distress and satisfaction with healthcare. Waddell and Waddell (2000) suggested that increase of functional status and return to work are associated with reduced pain while chronic disability and unemployment may lead to psychological disturbance. Research on work loss provides data about the working population but omits the impact of LBP in the non-working population (Waddell, 2004). The study reported in this thesis investigated the prevalence rates of LBP, its associated impact on restriction of work and non-work activity and absence from work and the relationships between the socio-demographic characteristics of male and female subjects aged 18 years and over in the general population in the Gaza Strip.
4.3 Background to the population in the Gaza Strip

A population-based telephone survey was used in this study. The survey focused on providing cross-sectional data about prevalence rates and risk factors of LBP during twelve months prior to interview. The Annual Report published by the Health Management Information Service of the Ministry of Health [HMIS] demonstrated in 2003 that 1,264,560 Palestinians lived in the Gaza Strip, half of them under 15 years of age and 3.9% aged 60 years and over. The Gaza Strip comprises five districts and people are distributed as the following:

- The Northern District with 235,589 residents, accounting for 18.6% of the total population of the Gaza Strip.
- The Gaza District with 446,927 residents, accounting for 35.3% of the total population of the Gaza Strip.
- The Mid-Zone District with 183,621 residents, accounting for 14.5% of the total population of the Gaza Strip.
- Khan Younis District with 245,983 residents, accounting for 19.4% of the total population of the Gaza Strip.
- Rafah District with 152,440 residents, accounting for 12.2% of the total population of the Gaza Strip (HMIS 2003).

The HMIS report (2003) also indicated that people in the Gaza Strip live in extended families, with average family size estimated to be 8 people living in each home. Due to life in the Gaza Strip being affected by the unsettled political state of the country, people's movement can be restricted at any time due to checkpoints between districts. Postal services are not reliable, but due to the current political situation and daily problems encountered, the vast majority of Palestinian families have telephones. In light of these factors, the best way to communicate with members of the public in the Gaza Strip was by telephone and was the reason that the researcher chose to conduct this survey by telephone interview. However, the researcher was aware that a small number of potential participants without telephones have been omitted from the survey.
4.4 Method

4.4.1 The questionnaire

This questionnaire was based on that used in the Omnibus Survey (Mason, 1994). The original questionnaire was developed in the UK to identify adults who had experienced LBP in the twelve months prior to interview. It was a face-to-face interview and subjects were presented with a diagram of the lower back to aid identification of symptoms. Also included in the questionnaire were questions about health care services, not yet available in Gaza, such as osteopathy and chiropractic therapies. Because the mode of data collection was by telephone and some of the questions were not applicable to Gaza, the questionnaire needed minor modification.

Although the wording of questions was not changed, the order of questions was rearranged to allow dialogue to flow naturally from one question to another in a telephone interview (see Appendix 11). As osteopathy and chiropractic therapies are not available to patients in the Gaza Strip, these questions were omitted. Two questions about marital status (Question 21) and associated pain (Question 16) were added. Due to natural suspicion about personal questions in Gaza, socio-demographic questions about age, occupation and location of home were moved to the end of the interview by which time it was anticipated the interviewer would have gained the confidence of the participant.

The questionnaire consisted of three parts. In the first part, the interviewer introduced him/herself and the aim of the interview to the respondent and asked for consent to carry out the interview (Question 1). The second part included two screening questions investigating the number of people in the family who were aged eighteen and over and whether any of them had LBP, for more than one day during the previous twelve months (Questions 2-4). The third part of the questionnaire was answered by individuals who had experienced LBP for more than one day during the twelve months prior to the interview (Questions 5-17).
Questions in the third part of the interview focused on the history, duration and course of LBP during the twelve months prior to interview, whether pain was present on the day of interview, self-reported causes, specific complaints, utilisation of health care facilities, health professionals contacted, work and health-related limitations in daily life during the four weeks prior to the interview. Questions about socio-demographic characteristics aimed to identify high risk groups. These questions included gender, age, marital status, work status, address and educational level (Questions 18-24).

The original Omnibus Survey questionnaire was designed for English speakers and needed translation into the Arabic language for use in Gaza. Translation from one language to another can alter the meaning of statements and statements may be significantly changed in a different social context. To ensure that the Arabic version of the questionnaire measured the same issues, the original questionnaire was translated into Arabic by a local professional translator. Then, the Arabic version was translated back into English by another translator. Finally the researcher and translators discussed translation of profession-specific words and phrases. Based on this “back-translation” approach (Oppenheim, 1992), the researcher revised and formulated the questionnaire into the Arabic language (Appendix 12).

4.4.2 Pilot testing

The revised questionnaire was piloted using eleven random telephone interviews from the target population, taking into account the geographical distribution of the population. The researcher interviewed five subjects and each research assistant interviewed three subjects. At the end of each interview, respondents were asked about the appropriateness of wording and whether the questions were clear or misleading. The researcher and the two research assistants discussed respondents’ comments and the time taken to complete each interview. They compared pilot subjects’ responses and developed the final version of the questionnaire; making further minor amendments in wording related to the local differences in written and spoken Arabic. Four of the participants in the pilot study, who were female, recommended that women respondents would relate better to female interviewers. This point was taken into account during data collection. When beginning interviews
with women, male interviewers asked subjects if they would prefer to talk to female interviewers. Those who preferred same-gender interviews were transferred to female interviewers.

4.4.3 Sample of the study

The population of the Gaza Strip was 1,264,560 people and the average family size was 8 people. This indicated that there were 158,070 households in the Gaza Strip. Based on the previous work of others (Mason, 1994 and Picavet and Schouter, 2003), it was decided to approach 500 households. With an estimated total number of households of 158,070 and the assumption of the one-year prevalence of LBP (30%) with margin error of ± 5% and confidence level of 95%, sample size calculations indicate that 383 households would be required to give a test power of 80%. A sample size of 500 increased the probability of representing the total population (test power) to 93% and decreased the margin error to 4.37. At the end of the sampling process, 502 households had been telephoned of which 422 households agreed to take part in the study comprising 1538 adults aged 18 years or over. This represents a response rate of 84%. Respondents who refused to take part in the study preferred not to give reasons for not participating and as it was ethically important not to pressurise potential participants, this was not explored further.

A stratified random sampling approach was used to ensure that the whole population of the Gaza Strip was represented. For this purpose, each district of the Gaza Strip was represented by a sample equal to its proportion of the total population. Accordingly, the North district was represented by 93 subjects (18.5%), Gaza district was represented by 179 subjects (35.7%), Mid-zone district was represented by 72 subjects (14.3%), Khan Younis district was represented by 97 subjects (19.3%) and Rafah district was represented by (12.2%) of the total population. Subjects were selected systemically from the telephone directory of each district using sampling interval method. Figure 4.1 shows the proposed sample of the study.
The proposed sample from the Gaza District appears to be much bigger than samples from other districts, because of the greater size of this district (see Section 4.3 of this chapter).

4.4.4 Administration of the survey

Before piloting the interview, the researcher contacted two volunteers to request their involvement in the telephone survey. One of them was a male general practitioner and the other was a female physiotherapy teacher at Al-Azhar University-Gaza. Both researchers agreed to assist in collecting telephone data, provided that the researcher agreed to pay the telephone costs and trained them in interviewing techniques.

4.4.5 Training for interviewers

As previously mentioned in Chapter Three, interviewing requires particular communication skills that help the interviewer to gain the confidence and cooperation of the interviewee and to capture the information needed for the study. Acquisition of these skills requires the development of theory and practice for talking
to other people purposively (LoBiondo-Wood and Haber, 2002). For this reason, the researcher arranged three workshops for the assistant interviewers aimed at developing their interviewing skills. During the workshops, the researcher and assistants discussed the importance of gaining confidence and co-operation of respondents in the interviews. The researcher explained the purpose of the interview and clarified the questions to be asked and time management. Research assistants learned how to acknowledge information given and the importance of maintaining confidentiality. The researcher and his assistants practiced mock interviews and discussed potential problems with interviewees.

4.4.6 The role of the researcher

The researcher was responsible for all the component parts of the survey process. This included defining the aim and objectives, planning the form and content of the survey, training volunteers, monitoring time of data collection, collecting and analysing data and writing up the report of the study.

4.5 Data collection

Each subject in the sample was allocated a code related to their telephone number and their answers were recorded on a pre-prepared form. Data were collected by the researcher and two research assistants who telephoned subjects and completed the allocated questionnaires during the interview. The researcher kept in daily contact with the assistants to deal with any problems and to collect completed questionnaires. Data collection took place in June, July and August 2004.

The researcher planned to telephone 502 households, aiming to get 400 responses. In the event 422 households agreed to be surveyed, indicating that the use of telephone surveys was acceptable in Gaza. Some of the initial respondents were women or children who requested interviewers to telephone again when the male head of the household was at home, or provided mobile phone contact numbers for their husband or father. As already mentioned, some women preferred to be interviewed by the
female research assistant. The researcher and his assistants made every effort to follow up people and solve the problems encountered.

4.6 Statistical analysis

In order to determine prevalence rates for LBP, distribution frequencies, means scores and standard deviations of households, subjects and socio-demographic variables were calculated. Frequencies and mean scores of each question were calculated to describe the health use and the impact of the problem on sufferers. All analyses were performed using the Statistical Package for the Social Sciences (SPSS 14).

4.7 Results

4.7.1 The sample of the study

Four hundred and twenty two households (84%) participated in the survey and Figure 4.2 shows the demographic responses for the study. There were 1538 adults aged 18 years or over living in the 422 houses telephoned. The results showed that 433 (28%) persons out of 1538 had LBP during the last twelve months. Four hundred and twelve adults with LBP agreed to take part in the study while 21 adults refused.
As a result of the non-participation of 80 of the telephoned households, the sample from the Gaza District is slightly over-represented, but samples from other districts are nearly similar to proposed representation (please see Figures 4.1 and 4.2).

4.7.2 The prevalence of low back pain

Four hundred and twelve subjects aged between 18 and 78 years old had reported LBP in the Gaza Strip during twelve months prior to the conduction of this study, with a mean age of 39.8 and standard deviation of 12.7. The highest prevalence was among those between 35-44 years, and lowest prevalence was among those in the 65 and over age-group. The proportions appeared to increase with age, rising from 12% among those aged 18-24 to 31% among 35-44 year olds. Then the proportions decreased to 4% in oldest age-group (65 years and over). See Table 4.2 and Figures 4.3, 4.4 and 4.5 for details.

The prevalence of LBP was 48% among men and 52% among women. The highest prevalence among women was in the 25-34 and 35-44 age-groups while the highest prevalence among men was in 35-44 age-group. Generally the prevalence was similar
among men and women in other age-groups. See Figures 4.3, 4.4 and 4.5. There were variations in educational levels between men and women especially within the group with no formal education. Out of 213 women with LBP, 33% were housewives. See Table 4.2.

People in the Gaza Strip live either in towns, villages or refugee camps (with greater numbers of LBP sufferers from towns and camps, than from villages). Table 4.2 summarises these findings.
Table 4.2: Characteristics of adults affected by LBP in the Gaza Strip

<table>
<thead>
<tr>
<th>Variable</th>
<th>No.</th>
<th>% of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>199</td>
<td>48.3</td>
</tr>
<tr>
<td>Female</td>
<td>213</td>
<td>52.7</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>49</td>
<td>11.9</td>
</tr>
<tr>
<td>25-34</td>
<td>96</td>
<td>23.3</td>
</tr>
<tr>
<td>35-44</td>
<td>126</td>
<td>30.6</td>
</tr>
<tr>
<td>45-54</td>
<td>88</td>
<td>21.4</td>
</tr>
<tr>
<td>55-64</td>
<td>36</td>
<td>8.7</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>17</td>
<td>4.1</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clerks</td>
<td>114</td>
<td>27.7</td>
</tr>
<tr>
<td>Professionals</td>
<td>24</td>
<td>5.8</td>
</tr>
<tr>
<td>Manual workers</td>
<td>43</td>
<td>10.4</td>
</tr>
<tr>
<td>Housewives</td>
<td>136</td>
<td>33</td>
</tr>
<tr>
<td>Students</td>
<td>22</td>
<td>5.3</td>
</tr>
<tr>
<td>Police force</td>
<td>15</td>
<td>3.6</td>
</tr>
<tr>
<td>Unemployed</td>
<td>32</td>
<td>7.7</td>
</tr>
<tr>
<td>Others</td>
<td>26</td>
<td>6.3</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>49</td>
<td>11.9</td>
</tr>
<tr>
<td>Married</td>
<td>347</td>
<td>84.2</td>
</tr>
<tr>
<td>Widowed</td>
<td>14</td>
<td>3.4</td>
</tr>
<tr>
<td>Divorced</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Residential location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Town</td>
<td>211</td>
<td>51.2</td>
</tr>
<tr>
<td>Village</td>
<td>37</td>
<td>9</td>
</tr>
<tr>
<td>Camp</td>
<td>164</td>
<td>39.8</td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>156</td>
<td>37.9</td>
</tr>
<tr>
<td>College</td>
<td>64</td>
<td>15.5</td>
</tr>
<tr>
<td>University</td>
<td>136</td>
<td>33</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>8</td>
<td>1.9</td>
</tr>
<tr>
<td>No formal education</td>
<td>48</td>
<td>11.7</td>
</tr>
</tbody>
</table>
Respondents who had suffered LBP in the last twelve months were asked whether the LBP had started for the first time in that year (short-term), or longer ago (long-term). One hundred and seventy nine sufferers (43%) had had the pain for the first time in the last year and 233 sufferers (57%) had had the pain both in the last twelve months and in previous years. The proportions of the two groups were approximately similar among men and women, but they varied in the different age groups. Younger sufferers were more likely to have a short-term LBP first starting in the last year, while in the older groups LBP was more likely to have been longer-term.

Results of this study showed that 225 (55%) respondents had LBP on the day of interview. The patterns of this "point" prevalence were different among men and women. The results showed that 104 men (46%) and 121 women (54%) had suffered LBP on the day of interview. In the group aged 25-34, higher prevalence was found among women while less higher prevalence was found among men in the groups aged 35-44. The point prevalence in other age-groups was similar for men and women, though there is some indication that it is slightly higher among women than men. Figures 4.3, 4.4 and 4.5 show the one-year prevalence, accumulative prevalence and point prevalence of LBP in relation to gender and age-related factors. Data related to one-year prevalence and point prevalence is displayed in Table 4.3.
Figure 4.3: The one-year prevalence of LBP by age and gender

Figure 4.4: The accumulative prevalence of LBP by age and gender
Figure 4.5: The point prevalence of LBP by age and gender
## Table 4.3: Prevalence rates of low back pain

<table>
<thead>
<tr>
<th></th>
<th>One year prevalence of LBP</th>
<th>Point prevalence of LBP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>199</td>
<td>48</td>
</tr>
<tr>
<td>Female</td>
<td>213</td>
<td>52</td>
</tr>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>49</td>
<td>12</td>
</tr>
<tr>
<td>25-34</td>
<td>96</td>
<td>23</td>
</tr>
<tr>
<td>35-44</td>
<td>126</td>
<td>31</td>
</tr>
<tr>
<td>45-54</td>
<td>88</td>
<td>21</td>
</tr>
<tr>
<td>55-64</td>
<td>36</td>
<td>9</td>
</tr>
<tr>
<td>65&amp;over</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clerks</td>
<td>114</td>
<td>28</td>
</tr>
<tr>
<td>Professionals</td>
<td>24</td>
<td>6</td>
</tr>
<tr>
<td>Manual workers</td>
<td>43</td>
<td>10</td>
</tr>
<tr>
<td>Housewife</td>
<td>136</td>
<td>33</td>
</tr>
<tr>
<td>Students</td>
<td>22</td>
<td>5</td>
</tr>
<tr>
<td>Police force</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Unemployed</td>
<td>32</td>
<td>8</td>
</tr>
<tr>
<td>Others</td>
<td>26</td>
<td>6</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>49</td>
<td>12</td>
</tr>
<tr>
<td>Married</td>
<td>347</td>
<td>84</td>
</tr>
<tr>
<td>Widowed</td>
<td>14</td>
<td>3.5</td>
</tr>
<tr>
<td>Divorced</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Level of education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>156</td>
<td>38</td>
</tr>
<tr>
<td>College</td>
<td>64</td>
<td>15</td>
</tr>
<tr>
<td>University</td>
<td>136</td>
<td>33</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>No formal education</td>
<td>48</td>
<td>12</td>
</tr>
</tbody>
</table>
4.7.3 Total time adults had suffered low back pain in the last twelve months

For 15% of subjects LBP had lasted for less than one week, for 38% it had lasted for less than four weeks, 19% said that it had lasted for less than twelve weeks and 15% had LBP for more than 12 weeks but less than the whole year. People who had LBP for the whole year accounted for 11% of all respondents. Eight adults could not remember how long they had LBP. In general, women had suffered for longer periods of time than men in all age-groups and in particular in the age groups 25-34 and 35-44 years (see Table 4.4). Of the 412 participants, each had experienced LBP for a period ranging between 1 and 6 days with mean of 2.7 days during 12 months.

<table>
<thead>
<tr>
<th>Duration of LBP in previous year</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than one week</td>
<td>62 (15%)</td>
<td>35</td>
<td>27</td>
</tr>
<tr>
<td>1-4 weeks</td>
<td>156 (38%)</td>
<td>80</td>
<td>76</td>
</tr>
<tr>
<td>5-12 weeks</td>
<td>77 (19%)</td>
<td>33</td>
<td>44</td>
</tr>
<tr>
<td>13 weeks to less than the whole year</td>
<td>61 (15%)</td>
<td>22</td>
<td>39</td>
</tr>
<tr>
<td>The whole year</td>
<td>48 (12%)</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Can’t remember</td>
<td>8 (1%)</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

4.7.4 Healthcare providers consulted by low back pain sufferers

About half (53%) of the sample had consulted general practitioners, 52% had seen an orthopaedic consultant or neurologist and 27% did not consult any health professional. Sufferers who saw general practitioners and consultants also accessed other health services. Overall, 40% had consulted a physiotherapist, 46% had visited an X-ray department and 5% had attended a hospital outpatients department. Relatively few had received secondary health care; only 3% had been admitted to a hospital ward, 2% had visited an Accident and Emergency Department and 2% had seen other specialists, mainly gynaecologists. Patients with LBP aged between 35 and 55 years and with school and university qualification appeared to have visited x-ray
departments more than those with less education, although the statistical significance of these results have not been explored. Table 4.5 shows health care professionals visited by adults with LBP.

Table 4.5: Health services used by adults with LBP

<table>
<thead>
<tr>
<th>Healthcare professional</th>
<th>Total visits (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General practitioner</td>
<td>53</td>
</tr>
<tr>
<td>Consultant</td>
<td>52</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>40</td>
</tr>
<tr>
<td>X-ray department</td>
<td>46</td>
</tr>
<tr>
<td>Out-patient department</td>
<td>5</td>
</tr>
<tr>
<td>Hospital admission</td>
<td>3</td>
</tr>
<tr>
<td>Accident and emergency department</td>
<td>2</td>
</tr>
<tr>
<td>No one</td>
<td>27</td>
</tr>
</tbody>
</table>

4.7.5 Restrictions in activities as a result of low back pain

The authors of the original questionnaire felt that people would not remember sufficient accurate information about restrictions of activities due to LBP for twelve-month period (Mason 1994). Therefore, they decided to ask about restricted activities for a four-week period. As the aim of the study was to gather information about the prevalence rates of LBP and its determinants for a twelve-month period, gathering information for a four-week period could affect validity of the results (Altman and Royston 2000). In the current thesis, the researcher used the same question used by the original authors which asked for a four-week period. This maintained reliability of the questionnaire and allowed comparability of the results (Altman and Royston 2000; Altman et al., 2009)) but validity may be questioned as LBP is a fluctuating condition.

Thirty seven percent of respondents who had LBP had spent at least one day resting supine during the last four weeks because of their LBP. In the four-week period prior to the interview, 10% of LBP sufferers had to spend one day at home resting because of their LBP. It was found that 8% had restricted their activities for two days and 7%
for three days. Relatively few had said that they spent more than three days lying down because their LBP. Two men reported that they stayed the whole of the previous month in hospital because of their LBP. One of them was involved in a car accident and the other man had fallen from a height. Both men had their accidents one month before the interview and they had recently been discharged from hospital. Participants in this study stayed at home with restricted physical activities for 698 days ranging between 1-30 days during four weeks prior to the study because of their LBP. Those who restricted activities for three days and more were almost all married adults.

4.7.6 Effects of low back pain on employment

Fifty seven percent of respondents said that their work had been affected during the last four weeks either by days off work or by restrictions placed on their work. Of these, 11% worked part-time and 32% had to avoid doing physical activities, especially movements of the back. Most days off work were reported by clerks and most housewives reported having to limit their activities because of LBP.

Of those who had taken time off work during previous four weeks (89 subjects), 22% had one day off work, 25% had two days off work, 17% had three days off work and 36% had more than three days off work because of their LBP. They had a total of 467 days off work ranging between 1-30 days with mean of 1.1 days during four weeks because of LBP. Men had 355 days off work while women had 112 days off work.

4.7.7 Factors related to the start of low back pain

Adults who had suffered from LBP in the previous year were provided with a list of possible factors and also invited to mention any others they thought relevant. The data showed that 39% of reasons given were work-related, either at home or in the work place. Of the women, 23% believed that it was due to problems resulting from pregnancy or child birth. Of all respondents, 13% believed that it was caused by an accident or injury, 10% said that they were born with back problems, 6% thought that it was associated with other medical problems and almost 9% did not know.
4.7.8 Other associated pain

Fourteen percent of respondents reported neck pain, 12% shoulder pain, 42% thigh pain and 48% leg pain associated with back pain. Women were affected by associated pain in neck, shoulders, thighs and legs more than men in all age-groups and in particular the group aged between 25-34 years old.

4.7.9 Abnormal sensations associated with low back pain

Respondents were provided with a list of possible symptoms of abnormal sensations that might present in association with LBP, such as; paraesthesia, numbness, heaviness and others. Thirty one percent reported that they had paraesthesia in their lower limbs associated with the back pain, 7% said they had numbness, 8% felt heaviness in their lower limbs and 2% felt other types of abnormal sensations such as; hotness, cold or loss of sensation. The study showed similarities in abnormal sensation between men and women who had abnormal sensations associated with LBP.

4.7.10 Incidence and prevalence of low back pain: comparison with the UK Omnibus Survey

The findings of this study showed that LBP is a major health problem in the Gaza Strip. Statistical analysis of the study indicated that 28% of the sample had at least one episode of LBP in the previous twelve month period. The one year incidence (new cases that develop within one year) of LBP was 12%, and the point prevalence (percentage who had back pain on the day of interview) was 15%. Figures from the UK (Mason, 1994) indicated that the year prevalence of LBP was 37%, the one year incidence was 7% and the point prevalence was 14% of the total population. There appear to be similarities in the point prevalence of LBP in the two societies, but differences in the accumulative prevalence and one year prevalence of LBP. These differences indicate that the recurrence of LBP in Britain is greater than in the Gaza Strip, and the incidence of LBP is greater in the Gaza Strip than in the UK. It could be
argued that time at which the data were collected in the Gaza Strip, after three years of the Second Intifada, people were experiencing high levels of stress due to living in a war zone. Whilst there is no clear reason in incidence between Gaza and the UK, this level of emotional upheaval could be a contributory factor in Gaza. Table 4.6 compares the prevalence of LBP in the Gaza Strip and the UK (Mason, 1994).

**Table 4.6: Prevalence rates of LBP: Comparison between the Gaza Strip and the UK**

<table>
<thead>
<tr>
<th>Prevalence rates</th>
<th>Gaza Strip</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of sample who had LBP during the previous year</td>
<td>28%</td>
<td>37%</td>
</tr>
<tr>
<td>Percentage of sample who had LBP during the previous year for the first time</td>
<td>12%</td>
<td>7%</td>
</tr>
<tr>
<td>Percentage of sample who had LBP on the day of the interview</td>
<td>15%</td>
<td>14%</td>
</tr>
</tbody>
</table>

### 4.8 Result key points

Results of this study (see Table 4.7) have highlighted that the highest one-year prevalence of low back pain was among women aged between 25 and 34 years and among men aged between 35 and 44 years. There were also apparent differences between groups with different levels of education, different use of health services, and between married and single women. To assess if the observed changes were real, control groups are needed. Control groups provide a baseline of comparison to interpret changes. The current study did not use control groups and, therefore, the differences found between population groups might have occurred by chance, or may reflect the underlying (control) population.
Table 4.7: One-year prevalence of LBP associated with socio-demographic variables

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>%</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GENDER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>199</td>
<td>48</td>
<td>NS</td>
</tr>
<tr>
<td>Female</td>
<td>213</td>
<td>52</td>
<td>NS</td>
</tr>
<tr>
<td><strong>AGE (years)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>49</td>
<td>12</td>
<td>NS</td>
</tr>
<tr>
<td>25-34</td>
<td>96</td>
<td>23</td>
<td>NS</td>
</tr>
<tr>
<td>35-44</td>
<td>126</td>
<td>31</td>
<td>0.001</td>
</tr>
<tr>
<td>45-54</td>
<td>88</td>
<td>21</td>
<td>NS</td>
</tr>
<tr>
<td>55-65</td>
<td>36</td>
<td>9</td>
<td>NS</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>17</td>
<td>4</td>
<td>NS</td>
</tr>
<tr>
<td><strong>OCCUPATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clerks</td>
<td>114</td>
<td>28</td>
<td>0.001</td>
</tr>
<tr>
<td>Professionals</td>
<td>24</td>
<td>6</td>
<td>NS</td>
</tr>
<tr>
<td>Manual workers</td>
<td>43</td>
<td>10</td>
<td>NS</td>
</tr>
<tr>
<td>Housewife</td>
<td>136</td>
<td>33</td>
<td>0.001</td>
</tr>
<tr>
<td>Students</td>
<td>22</td>
<td>5</td>
<td>NS</td>
</tr>
<tr>
<td>Police force</td>
<td>15</td>
<td>4</td>
<td>NS</td>
</tr>
<tr>
<td>Unemployed</td>
<td>32</td>
<td>8</td>
<td>NS</td>
</tr>
<tr>
<td>Others</td>
<td>26</td>
<td>6</td>
<td>NS</td>
</tr>
<tr>
<td><strong>MARITAL STATUS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>49</td>
<td>12</td>
<td>NS</td>
</tr>
<tr>
<td>Married</td>
<td>347</td>
<td>84</td>
<td>0.002</td>
</tr>
<tr>
<td>Widowed</td>
<td>14</td>
<td>3.5</td>
<td>NS</td>
</tr>
<tr>
<td>Divorced</td>
<td>2</td>
<td>0.5</td>
<td>NS</td>
</tr>
<tr>
<td><strong>LEVEL OF EDUCATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>156</td>
<td>38</td>
<td>NS</td>
</tr>
<tr>
<td>College</td>
<td>64</td>
<td>15</td>
<td>NS</td>
</tr>
<tr>
<td>University</td>
<td>136</td>
<td>33</td>
<td>NS</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>8</td>
<td>2</td>
<td>NS</td>
</tr>
<tr>
<td>No formal education</td>
<td>48</td>
<td>12</td>
<td>NS</td>
</tr>
</tbody>
</table>

In the case of a study using a control population, statistical significance of differences could be calculated by standard statistical tests which take into account the sample size and normal variation within the population. For example, descriptive statistics showed that patients with LBP aged between 35 and 55 years and with school and university qualification were more likely to visit x-ray departments than those with
less education. To explore the relationship between groups with different levels of education certificate and use of health care, cross-tabulations could be presented, showing the number of LBP sufferers who did or did not visit health professionals. The chi-square test could be used to examine this relationship statistically, to determine if there was a significant relationship between the two variables (level of certificate and use of health care) (Portney and Watkins 1993; Bland 2003). With this approach, the association or lack of association between two variables (education and X-ray use) can be examined. This association is based on the proportion of LBP sufferers who fall into each category. Such categorical data are analyzed by determining if there is a difference between the proportions observed within a set of categories and the proportions that would be expected by chance as calculated by reference to the control group: that is the chi-squared test.

It is possible to undertake Chi-squared tests on sample variables, testing for independence of the variable from the classification (eg LBP) (Hicks 2004). Such tests compare the proportion of LBP sufferers in various categories based on a theoretical distribution of 50:50 (Portney and Watkins 1993) although the use of the Chi-square test in this manner requires at least 20 subjects to be in each group (Hicks 2004).

In the current study, use of such tests indicated that dominant characteristics of the subjects such as marriage, housewives and clerks (occupation) were not independent of LBP (see Table 4.7). Some of the groups, however, had counts of less than 20 - postgraduate qualifications were 8, divorced subjects were 2, widowed subjects were 14 and police force were only 15 subjects. Application of the chi square test to examine the association between prevalence of LBP and socio-characteristics of subjects was therefore inappropriate. Furthermore, the cross-sectional nature of the current study only allows the association between population and development of LBP to be examined, it is not possible to establish the causal relation between marriage and development of LBP for example.

Accordingly, the thesis was presented using descriptive statistics only. The aim of conducting this study was to investigate the prevalence of LBP and its risk factors in the Gaza Strip. Descriptive statistics have identified the prevalence rates of LBP in the
Gaza Strip and suggested risk factors that warrant further investigation. Searching the literature shows that previous studies of prevalence of LBP (e.g. Mason 1994; Picavet and Schouten 2003) only used descriptive statistics to identify prevalence rates of LBP. Use of inferential statistics required data from a baseline, control group for comparison. Such data was not available.

4.9 Discussion

This part of the study aimed to identify the epidemiology of LBP and its related risk factors in the Gaza Strip. The importance of this data is that its findings provide the first statistical data related to the LBP profile in the Gaza Strip. One of the strengths of the findings being that the size of the sample decreased the chances of sampling errors. The sampling and analysis of this study required information on the general population in the Gaza Strip. Due to lack of resources in Gaza, data used in this study were limited to data available from the Palestinian Ministry of Health, the Census-Palestinian Central Bureau of Statistics and the United Nations Relief and Work Agency (UNRWA) reports. Another limitation of this study was that because literature about LBP in the Arab world was limited, it was not possible to make comparisons with other Arab countries. The study reported in this chapter indicated common determinants of the prevalence of LBP in the population of Gaza, but it did not examine all factors related to prevalence of LBP. Some of these factors such as lifting, smoking and life style are different in Gaza compared with western populations. Anecdotally, it can be said that Gazan men smoke heavily, compared to westerners, and the sophisticated technology used in western societies to assess and treat patients with LBP, are not available in Gaza.

The data obtained were based on self-reports using structured questions about general experience of LBP. This method of data collection ensures a high response rate, accurate sampling and a minimum of interviewer bias but perception and expression of pain is not always the same among different subjects which may affect validity of results. The study reported in this chapter indicated common determinants in the prevalence of LBP in the population of Gaza, but it did not examine all factors related
One limitation of the study was that it investigated the prevalence of LBP in Gaza without recourse to previous literature related to the Arab world.

The Omnibus Survey reported by Mason (1994) did not cover all aspects of prevalence and therefore, other possible causes and risk factors for LBP, such as lifting, smoking and lifestyle, were not included in the survey. The research reported here was based on the Omnibus Survey because it was the best available in the literature at the time and contained information about the prevalence of LBP that could be generalized to the situation in non-western contexts for clinical and health planning purposes.

Another limitation may be due to the way in which information was obtained during data collection. In the second part of the questionnaire, respondents were asked if any member of the family had experienced LBP in the previous twelve-month period. There was a possibility that some members of the family had experienced LBP but the respondent did not know of it. The population in the study included adults aged 18 years and over and there may be a possibility for people under 18 years to develop LBP. This might be said to cause sampling error but rigorous sampling obtained by randomization of subjects, in the study reported here, minimises the sampling error (Hicks, 2004), and the study can be generalized only for adult population.

One of the socio-demographic variables investigated in this study included level of education. This variable was categorised by qualifications. The researchers asked about these orally, without seeing the certificates themselves. However, other epidemiological studies have not addressed level of education as an important factor in the prevalence of LBP.

### 4.9.1 Age and Gender

Results of the study showed that 28% of the sample had experienced LBP for at least one day in the previous year. The ratio of women to men affected were 52% and 48% respectively which is consistent with other studies conducted in some developed societies (Von Korff, et al., 1988; Mason, 1994; Walker, 2000). In general the
prevalence of LBP in Gaza appears to increase with age, rising to a peak in the 35 - 44 age groups, after which it begins to decrease. These results support those of Mason (1994) in the British survey, who found no differences among men and women in different groups and the highest prevalence was in the 35-44 age-group for both genders.

With regard to gender and age-group, the highest year prevalence among women was in the 25-34 age-group and the 35-44 age-group among men. A comparative study of the epidemiology of LBP in Indian and black communities in South Africa was conducted by Docrat (1998) in an unpublished chiropractic thesis at Technikon Natal. On the basis of a random sample size of 1000 (500 Indians and 500 black subjects), he compared the two communities with regard to the prevalence of LBP and factors responsible. The lifetime incidence of LBP was found to be 78% for Indians and 76% for black subjects. The one-year prevalence was found to be 45% among Indians (64% in women and 36% in men) and 33% among black subjects. There were no differences in gender among South African blacks. Docrat (1998) suggested that the higher prevalence in Indian women could be explained by being traditionally underprivileged, abandoned by their migrant husbands who work in South African mines and given little or no access to basic health services and education to protect them from LBP. Docrat also argued that the collection of firewood, collecting water for domestic use from faraway places, intensive farm work, the absence of electricity and chronic poverty made the rural women in Lesotho particularly vulnerable to LBP. Palestinian women do not face the specific intensive and physically stressful problems that Docrat (1998) describes for his Indian participants, but they do live in a stressful environment that affects daily life in Gaza.

A study from the Middle East showed that Lebanese women reported higher psychological symptoms than men at the time of the Lebanese war (Farhood, 1999). Also during the Iraqi invasion of Kuwait, Al Khawaja (1997) reported that women were exposed to fewer traumatic events than men but scored higher on psychiatric symptoms. These findings reflect the social position of women in other parts of the Middle East where there is conflict. Such women are protected from physical harm by remaining at home during strikes and demonstrations, and thus are less often injured physically but their concerns for the safety of their fathers, husbands and sons who
have to face traumatic situations outside the home, manifest themselves in psychological distress.

In the Palestinian context, the incidence of LBP of young women might possibly be explained by the fact that women often experience more stressful and negative life events than men. A study conducted by Gaza Community Mental Health Programme showed that 63% of Palestinian women in Gaza were exposed to psychological traumatic events (Qouta, 2000). Qouta’s study was conducted during the First Intifada when young Palestinian women were more actively involved in the struggle against occupation which might have increased their stress levels. Qouta (2000) suggested that their new political duties added to the pressures of their traditional role as child bearers and carers and led to depression. These political duties included being outside the family home and facing Israeli soldiers which might result in more stress, depression and sometimes torture and imprisonment. The research reported in this thesis took place during the Second Intifada and it is speculated that the stresses on women would be at least of the same magnitude.

Other explanations may be social. In the Gaza Strip, girls live with their families until they are married when they move to the house of their husband’s family. Marriage provides the Palestinian woman with social privileges, freedom and security and delay of marriage may cause stress and social and cultural pressures. However, marriage itself increases a woman’s authority and responsibility for her family and her husband, which may also cause increased stress. There are no statistics reporting domestic abuse in the Gaza Strip. Traditionally, there is a marked preference for boys over girls and for men over women (Simister and Younis, 1999) because men are considered to contribute more to the family’s influence in the community. This may have an impact on the social life of girls and women in the Gaza Strip. Due to lack of research in Gazan society, it would be difficult to estimate how much the prevalence of LBP among Gazan women is affected by social life but highlighting these social issues may benefit strategies for future research and management.

The study showed that the average number of pregnancies for women in the Gaza Strip is 6.4. This may be considered to contribute to the prevalence of LBP in the 25-34 age-groups, possibly supported by the fact that some of the other health
professionals consulted about LBP were gynaecologists. The consistency of the findings of surveys conducted in developed societies (Sanders et al., 1992; Mason, 1994; Papageorgiou et al., 1995; Honeyman and Jacobs, 1996; Walker, 2000) and the current study indicate that age is a risk factor in LBP but the increased prevalence rate among Gazan women in the 25-34 age group suggests that the number of pregnancies may play a role in the development of LBP (see Chapter 2, section 2.5: the average family size in Gaza is 8 people). The fact that western studies report higher rates of prevalence of LBP in older women, whilst the study conducted in Gaza does not, perhaps suggests that socio-cultural factors may influence which age-groups and gender are more likely to report LBP in different societies.

4.9.2 Total time adults suffered low back pain in the last year

Findings of this study indicated that 11% of the sample had LBP for the whole year, 15% had LBP for more than 12 weeks but less than the whole year, 19% said that it lasted for less than 12 weeks, 38% had LBP for less than 4 weeks and 15% had it for less than one week during the previous year. Mason's (1994) study reported that 20% of the British sample had LBP for the whole year and 50% had it for less than 4 weeks. While the Gazan Survey reported differences in gender and a sharp decrease in incidence in older people, the British Survey showed similar figures for gender and different figures for prevalence of LBP in older people.

Gazan young women and British old people have different social roles. Differences in both studies highlight the importance of social differences in the epidemiology of LBP in different societies. This issue has been highlighted in the epidemiology of LBP suggesting that different strategies for LBP management are appropriate in different societies.

4.9.3 Consultation with health professionals

The majority of people with LBP (73%) consulted various health professionals available in the Gaza Strip. Although approximately one quarter of patients did not seek professional help during the previous year, the questionnaire used in this study
did not investigate reasons. However, reasons possibly relate to socioeconomic status. The total income in the Gaza Strip sharply decreased during the year prior to the survey and Ramlawi et al (2003) suggested that inability to pay for health insurance and restriction of mobility, due to curfews and road blocks, were possible causes for patients not seeking medical assistance. Because of lack of data, it is not possible to draw firm conclusions from these results.

4.9.4 Causes of low back pain

As in British surveys and others throughout the world (Mason, 1994; Andersson, 1999), people in the Gaza Strip attributed work-related causes to their LBP. Women added pregnancy and childbirth to the main possible causes for LBP in addition to work-related events. Researchers in the USA (Yelin, 1997) and the UK (Erens and Ghate, 1993) reported that patients with LBP were likely to consult health professionals for help with stress and mental disorders associated with LBP. It is not known if this is the case in the Gaza Strip but seems unlikely in light of strength of extended family networks and unwillingness to admit psychosocial problems outside the family.

The prevalence of LBP in most studies was reported regardless of the cause. There appear to be no studies exploring the influence of physical and psychosocial causes separately. The findings of this study highlight the importance of addressing possible socio-cultural causes for LBP in physiotherapy education and practice in the Gaza Strip. Views expressed by the participants reported here highlighted the physical causes of the condition of LBP and they tended to focus on pain as central to back functions and physical causes of LBP. Participants in this study did not record psychological or social influences in the progress of LBP symptoms and only suggested physical causes for their pain. This information may reflect health and cultural beliefs about pain and its development in Gaza.
4.9.5 The impact of low back pain on daily activities and work

The Gazan study showed that those who reported absent from work were mostly government employees who were assured of a salary at the end of each month. It has been reported that LBP interferes with patients’ routine activities and work for an average of 23 days per year (Taylor and Curran, 1985; Andersson, 1999; CBS News Poll, 2003, Waddell, 2004). Most patients with LBP appear to recover quickly and without residual functional loss. Overall (Andersson, et al., 1983; Spitzer, et al., 1987; Webster and Snook, 1994), figures suggest that 60-70% of patients recover by six weeks and 80-90% by 12 weeks. Recovery after 12 weeks is thought to be slow and uncertain. Fewer than half of those patients disabled for longer than six months are reported as returning to work and after two years of absence from work, the return-to-work rates appear to be close to zero (Spitzer, et al., 1987).

Compensation has been argued as a negative influence on the length of disability, but as there are no compensation systems in Gaza this may have reduced the prevalence of LBP. The differences between this study and studies from western countries can be explained by compensation issues, differences in health systems, culture and social values as women and men in the Gaza Strip have different social roles and characteristics.

The data reported here showed that women had more restrictions on their activities and men had more days off work in the same age-groups in the Gaza Strip. The sample in this study included 136 housewives out of 213 women who participated in the study. In the Gaza Strip, men constitute the major bulk of the work force and the majority of women stay at home doing domestic work. Although, women are respected, it is also true that they often face discrimination in public life, and the social climate does not facilitate social mobility for women. The reason women find it difficult to adjust to public life is as much for social as religious reasons. In general, women are considered to need protection by male members of their families in public gatherings. Whilst there is no research evidence for this, all these reasons might contribute to lack of independence and possible frustration, the consequences of
which could be responsible for the higher prevalence rates of LBP among young women in the Gaza Strip.

4.10 Conclusion

The survey reported in this chapter presents important data on LBP in the Gaza Strip. It shows that LBP is a major health problem for adults aged 18 years and older in the Gaza Strip, with young men less likely to develop low back pain than young women. The incidence of LBP is higher in the Gaza Strip than in the UK, but the recurrent LBP rate is less, which may predict lower rates of disability in Gaza than western societies. The reasons for variation between the outcomes of this study and outcomes from western literature are not known, but the author suggests that differences may be due to social and cultural factors. This influence will be explored further in subsequent chapters.
Chapter Five

Physiotherapists' Attitudes, Beliefs and Recommendations for Low Back Pain in the Gaza Strip

5.1 Introduction

Low back pain remains a major cause of pain, disability and economic cost worldwide (Papageorgiou, et al., 1995; Hillman, et al., 1996; Volinn, 1997; Watson, et al., 1998), and is one of the least understood painful conditions (Hrudey, 1991; Krismer and van Tulder, 2007). The management of LBP is a major challenge for healthcare providers (Waddell, 2004), and its evaluation is an ongoing process.

Physiotherapists are one of the largest professional groups who treat LBP worldwide, which accounts for approximately 25-30% of caseloads in outpatient physiotherapy settings (Holdsworth et al., 2006). It has been reported that approximately 90% of LBP patients have symptoms that are non-specific in nature and appropriate for conservative management (Holdsworth et al., 2006). Serious pathology is rarely encountered in NSLBP, but any physiotherapy assessment process should be sufficiently thorough to ensure that, if present, this is identified and the patient referred for appropriate management (CSP, 2006).

The attitudes and beliefs of physiotherapists have been suggested as influential in the outcome of treatment of NSLBP (Kerssens et al., 1999; Ostelo et al., 2003; Houben et al., 2005). Sanders et al (1992) suggest that attitudes and beliefs can be influenced by external factors such as culture and may be expressed differently in different cultures. The attitudes and beliefs of patients or health care providers in an Arabic country are unknown. It was because of this lack of evidence that this study surveyed the opinions of physiotherapists in the Gaza Strip. The study reported here also investigated physiotherapy approaches and physiotherapists' recommendations utilised in the management of NSLBP in the Gaza Strip. In this thesis, the term "LBP" refers to "NSLBP".
5.2 Background to the study

The literature on LBP reports that most healthcare professionals have difficulty choosing appropriate management strategies for patients with LBP and predicting which of them will develop chronic LBP (Houben et al., 2005; Marjorie et al., 2008). Epidemiological studies have suggested that chronic LBP may be attributed to soft tissue pathology, neurological dysfunction (Wiffen, 2002), psychological distress (Power, et al., 2001) and job stresses (Meir, et al., 1990; Williams, 1998). In the absence of a clear cause, LBP is commonly described as a problem identified by pain and reduced or loss of function.

In the physiotherapeutic process, the expression of pain is at the heart of the initial consultation between a patient presenting with LBP and his or her physiotherapist. Indeed, 99% of individuals with back disorder report pain as their main symptoms (Waddell, 2004). In this situation, an individual first experiences pain following tissue stress or trauma and expresses his or her pain experience in Socio-communications Model of Pain Experience described by Prkachin and Craig (1995). In this model, information about the experience is expressed by the individual using different forms of communication, categorised as self-reporting which includes verbal and non-verbal communications (Hadjistavropoulos and Craig, 2002). The physiotherapist, as an observer, decodes the individual's expression of pain by detecting and interpreting it. The physiotherapist may then proceed to undertaking certain actions in response to the individual's pain (Hadjistavropoulos et al., 2004). According to Hadjistavropoulos et al. (2004), the physiotherapist, as observer, chooses the appropriate intervention based on his/her appreciation of the patients' pain experience. This model of pain experience highlights the multiple interpersonal, social and contextual factors, which influences the experience and the expression of pain by the individual. On the other hand, these factors affect the physiotherapist's detection of the individual's pain experience as well as his or her treatment decisions (Hadjistavropoulos et al., 2004).

Pain is considered to be an everyday experience promoting behaviour leading to escape from or avoidance of harm (Melzack and Wall, 1982; Werner et al., 2005).
From this perspective, pain is seen as a positive experience with a strong survival value. On the other hand, pain can be seen as a disruptive and unpleasant experience (Eccleston and Crombez, 1999) that may persist long after its survival value is spent. A person's attitude towards pain is likely to be influenced by their belief system and this in turn influences their behaviour.

Pratkanis and Greenwald (1989) define an attitude as an evaluation of an object about which an individual has some knowledge. Value and opinion serve as dimensions of judgement or as abstract standards for decision making, through which the individual may develop specific attitudes and beliefs (Rokeach, 1973). Perhaps the commonest way that an attitude develops is through a personal experience that results in an evaluation of a particular issue. Accordingly, physiotherapists' attitudes towards LBP can be influenced by their knowledge and experience about pain and disability, mediated through cultural and individual interpretations of pain.

Agreement between patients' and physiotherapists' perceptions on various aspects of the pain experience seems to be important in the management of LBP. The literature on patients' and health professionals' (mainly physicians' or nurses') perceptions of pain indicates that a health professional's perception of the patient's pain experience may not be equivalent to the patient's (Solomon, 2001; Suarez-Almazor et al. 2001). Similar findings have also been found for functional limitations (Kwoh et al., 1992). This difference may influence treatment decisions and advice provided to patients on return to work and activity.

Earlier in this thesis (Chapter 4), the researcher argued that many of the differences in results from epidemiological studies could be due to different aims and data collection methods used in each study. However, there seems to be a general consensus in the literature that culture may play an important role in the formation and development of attitudes and beliefs about pain perception and interpretation in LBP (Sanders et al., 1992; Main and Spanswick, 2000; Linton, 2002; Waddell, 2004). At the same time, it is clear that there is no consensus in the literature about actual agreement levels between patients' and health professionals' perceptions. In their review of the literature, Sneeuw et al., (2002) stated that, in some studies, health care professionals tend to perceive higher levels of functional limitations and pain than the patients.
themselves. These authors suggested that the mixed findings between studies might be
due to methodological heterogeneity and important study limitations. They also found
that, in previous studies, patients' and professionals' perceptions were not
systematically assessed using the same instruments which may introduce bias.

In the rehabilitation field, a few studies have been carried out. A study conducted by
Pierre et al. (1998) revealed that, in a rehabilitation setting, patients and health
professionals showed poor agreement for measures of physical functioning and
moderate agreement for bodily pain. In another study by Daniel et al., (1983), the
authors indicated that health professionals showed higher degrees for improvement
than patients. Prkachin et al., (2001) presented video footage of individuals with
shoulder pain during mobilisation of the painful joint to 34 physical and occupational
therapists. Therapists' ratings of the patient's pain on a pain affect scale were
compared to the patient's ratings on the same scale. Results of this study demonstrated
that the professionals underestimated the pain of patients, based on observation of
facial expressions. Although these studies used different methods of data collection
with different levels of validity of tools used, it would be accepted that patient-
physiotherapist agreement of pain perception is important in the assessment and
treatment of pain.

With regard to LBP, Cedraschi et al. (1996) conducted a study to determine the level
of congruence between the perception of patients with LBP and their respective
therapists (chiropractors or rheumatologists). The authors found high congruence
between patients and therapists in 39.4% of dyads, moderate congruence in 35.2%
and low congruence in 25.4%. Finally, Perreault and Dionne (2005) conducted a
study to describe patient-physiotherapist agreement for LBP intensity and functional
limitations, and to identify correlates of agreement. The authors found frequent
discrepancies between patients' and physiotherapists' perceptions of the patients' LBP
experience. They recommended that gaining a better understanding of the level of
patient-physiotherapist agreement and identifying correlates of agreement may help
improve physiotherapists' interventions with people with LBP. Although there are
important limitations of these studies in terms of subjective data and different scales
of measurements, and different patients and health professionals used, agreement
between attitudes and beliefs of patients and their physiotherapists seems to be
important in the management of LBP. As stated early in this chapter, attitudes and beliefs of physiotherapists can be influenced by external factors such as culture.

One of the objectives of the study reported in this thesis was to explore the attitudes and beliefs of Palestinian physiotherapists about LBP. The definition of “pain beliefs” used in this part of the study was "physiotherapists’ thoughts about what patients’ pain is and what it means to them in the management of patients with LBP". Physiotherapists’ beliefs about pain are important because they can influence their choice of treatment strategy (Stenmar and Nordholm, 1994; Houben et al., 2005) or advice given to patients (Askew et al., 1998; Ostelo et al., 2003; Pincus et al., 2007) and in turn impact on patients’ beliefs about pain and level of activity when in pain. It is hoped that findings of the current study will contribute to developing LBP management strategies in the Gaza Strip. In the following sections, the researcher discusses the related definitions and literature about the influence of physiotherapists' attitudes and beliefs on the management of LBP.

5.2.1 The influence of physiotherapists’ attitudes and beliefs on management of low back pain

The literature suggests that physiotherapists’ attitudes and beliefs about LBP can be developed through a predominant biomedical or biopsychosocial model of health. In the biomedical model, treatment is directed towards a particular pathological condition, in which there is a direct relationship between amount of damage and pain experienced. Physiotherapy management using this perspective focuses on treatment of the underlying pathology or structure. The biopsychosocial model takes into account the interaction of physical, psychological and social aspects of pain (Waddell, 2004) and acknowledges the impact of these factors on each other and their affective influences of the individual’s life perspective at any one time.

There is little evidence that the application of a biomedical approach to LBP can achieve a remedy or a cure (Vlaeyen and Crombez, 1999), because the expression of pain is influenced by many factors, and there is little association between the amount of tissue damage and the severity of the pain experience (Jensen et al., 1994b).
Therefore it would seem important, during assessment and reassessment, that the physiotherapist and patient together identify the barriers that may delay or prevent recovery, including psychological and social factors.

Even as far back as the early 1990's, many physiotherapists recognised the importance of psychological factors in the patients’ pain experience and advocated incorporating patients’ beliefs within pain management strategies (Harding and Williams, 1995; Klaber Moffett and Richardson, 1995; Gifford, 1999; Main and Watson, 1999). While observations of this approach have been reported, the influence of subjectivity on pain measurements has caused limitations in both data collection and analysis. This may partially explain why several years later some physiotherapists were still using a purely biomedical approach (Daykin and Richardson, 2004; Bishop and Foster, 2005). Foster et al., (1999) conducted a survey to investigate physiotherapy practices for LBP throughout the UK, using a descriptive questionnaire to investigate clinical practice at that time. They found a bias towards manual therapy mobilisations and reported that most physiotherapists in the sample continued to treat chronic LBP using a biomedical approach. With line of this, Bishop et al., (2008) stated that many physiotherapists in the UK continue to advise limitations of work and activity levels, despite identifying when patients with LBP are at risk of chronicity and current best evidence advocating the incorporation of psychosocial factors into treatment and management.

Most research into pain beliefs has focused on patient perspectives, using questionnaires to collect data (Wolff et al., 1991; Battie et al., 1994; Stenmar and Nordholm, 1994; Askew et al., 1998; Gyllensten et al., 1999; Daykin and Richardson, 2004). There has been less research into the pain beliefs of physiotherapists.

In 1994, Stenmar and Nordholm (1994) investigated beliefs of 142 Swedish physiotherapists about important factors in treatment, using a questionnaire of 22 Likert-type items and various demographic variables. The findings indicated that a majority of the sample believed that the patient’s own resources and the patient-therapist relationship are the most important factors in explaining why physiotherapy is successful. More recently, Ostelo et al., (2003) designed a special questionnaire based on earlier patient questionnaires, to examine attitudes and beliefs of 421
physiotherapists about LBP and its management. It has been suggested by Ostelo et al. (2003) that attitudes and beliefs of physiotherapists vary between valuing a behavioural-oriented biopsychosocial approach or a structure-oriented biomedical approach. In 2004, Daykin and Richardson conducted a qualitative study to explore the nature of physiotherapists' pain beliefs and the role they played in their management of LBP in the UK. They suggested that, in order to maximise the rehabilitation potential of patients with chronic LBP, physiotherapists to be aware that their own pain beliefs may influence their management of patients. The researchers have been unable to identify any research evidence to show that physiotherapists' are aware that their attitudes can influence treatment outcomes. As such awareness seems to be important, the research reported in this thesis included an objective to explore the attitudes and beliefs of Palestinian physiotherapists.

5.2.2 The influence of patients' attitudes and beliefs on the progress and management of low back pain

Many factors associated with the development and progress of LBP can be influenced by culture and social life and people in different societies vary in their expression of the disability associated with LBP. Sanders et al (1992) reported that Hispanic people are more likely to believe that health problems, such as LBP, are beyond their control and employ fewer self-management strategies than other cultural groups and New Zealanders tend to rate themselves as less dependent on physicians' orders in the management of LBP than Americans. Italians, New Zealanders and Americans, have reported significantly higher LBP disability levels on the Sickness Impact Profile than Mexicans, Colombians and Japanese (Sanders et al., 1992). In a comparison between Japanese and Americans measured using the Sickness Impact Profile, Japanese respondents had approximately 40% lower disability levels associated with LBP than Americans (Brena, et al., 1990). Of the many psychosocial factors reputed to be associated with LBP, patients' attitudes and beliefs are considered to have a powerful influence on disability (Riley et al., 1988; Symonds et al., 1996; Cole et al., 1999; Guck et al., 1999).
There is limited data on the effects of culture on beliefs and attitudes in the Middle East, but the Quran encourages Muslims in the Middle East to believe that disease and related pain is controlled by God but human beings are obligated to seek for a cure. Anecdotal evidence indicates that these beliefs may lead to fatalism and passive acceptance, but Muslims are instructed to actively seek alleviation of their pain (Khan, 1990).

5.2.3 Measurement of pain beliefs and attitudes

Several studies have considered patients’ attitudes and beliefs to be a powerful influence on disability in LBP (Riley et al., 1988; Slater et al., 1991; Symonds et al., 1996; Cole et al., 1999; Guck et al., 1999). Riley et al (1988) developed the Pain and Impairment Relationship Scale (PAIRS) to evaluate patient beliefs about relationships between pain and impairment. Higher PAIRS scores are said to identify people who believe that pain justifies limitation of activity and disability. Rainville et al., (1995) adapted the PAIRS to the Health Care Providers Pain and Impairment Relationship Scale (HC-PAIRS). This scale measures the attitudes and beliefs of health care professionals towards chronic LBP and explores the influence of the medical information they provide to patients. Rainville et al (1995) argue that high scores on the HC-PAIRS indicate an attitude that pain justifies limitation of activity. The HC-PAIRS was the first attempt to provide information about health care professionals, and indicated that health care providers differ in their attitudes and beliefs towards LBP.

Ostelo et al., (2003) developed the Pain Attitudes and Beliefs Scale for Physiotherapists (PABS-PT) to assess physiotherapists’ attitudes and beliefs about LBP and its management. This questionnaire consists of 64 items and 3 case studies addressing attitudes and beliefs of physiotherapists about the nature and different approaches used in the management of LBP. Each item of the questionnaire relates to either biomedical or biopsychosocial approach with higher scores indicating a positive attitude towards either approach.
High scores on items related to the biomedical approach indicate that a physiotherapist believes that pain and disability are a consequence of physical pathology and he/she will be likely to adapt treatment to the pain level of the patient. In this model, treatment will primarily be aimed at finding and treating the physical pathology that is the cause of the pain.

High scores on items related to the biopsychosocial approach, are said to indicate physiotherapists believe pain is not necessarily a sign of pathology or tissue damage, but may be influenced by social and psychological factors. Because of these factors, disability due to pain is said to persist after the initial pathology has healed. According to this model, treatment should focus on an increase in activity (Lindstrom et al., 1992). The authors of PABS-PT (Ostelo et al. 2003) recommended that a more extensive investigation of the validity of the PABS-PT be performed and suggested using Kugler et al’s (1999) Photograph Series of Daily Activities (PHODA) to do so.

The research reported in this thesis used an adaptation of the PABS-PT questionnaire and Kugler et al’s PHODA questionnaire to investigate attitudes and beliefs of Gazan physiotherapists about LBP and its management. Justification for the use of PABS-PT is given in sections 5.3 and 5.3.1 of this chapter.

5.2.4 Recommended levels of activity for patients with low back pain

Traditionally, people with severe pain, restrict their physical activities (Waddell, 2004). Restriction of back function in patients with LBP is based on concerns that physical activity will cause re-injury (Vlaeyen et al., 1995; Vlaeyen and Linton, 2000). Patients are likely to be fearful that pain experienced on movement will result in re-injury and therefore, may avoid physical activities. As a consequence of lack of movement, patients may develop muscle weakness which may lead to disuse, disability and depression. On the other hand, patients who are not fearful of physical activity will be more likely to resume daily activities and recover successfully (Vlaeyen and Linton, 2000).
The fear of pain appears to influence the management of patients with LBP, and has already been shown to be influenced by culture. According to Zborowski (1969), in western societies, the fear of pain is said to rank only second to the fear of death. Despite changes in western society over the last 40 years, LBP is still considered a threat to social status, involving emotional loss and possible change of role (Waddell et al., 2002). In some cultures and religious groups, pain is regarded as morally elevating or a means of expiating feelings of guilt attached to a supposed transgression (Wyke, 1976). It is written in the Hadith that the Prophet Mohammed warned Moslems against malingering (pretending to be ill), and that if they did so, it would lead to illness and possibly death (Khan, 1990) implying that Moslems have a responsibility to return to active life as soon as possible.

In more recent years, reduced levels of physical activity have been identified as one of the perpetuating factors leading to chronic problems (Hasenbring et al., 1994; Vlaeyen et al., 1995). A systematic review of studies up to 2003 conducted by van Tulder and Koes, (2004a, 2004b) found adverse effects from bed rest, such as joint stiffness, muscle wasting, loss of bone mineral density, pressure sores and venous thromboembolism. As a result of these findings, the reviewers concluded that "advice to stay active" for patients with LBP reduced the number of sick days. Ferguson and Ahles (1998) suggest that the development of LBP symptoms is not associated with consistent specific risk factors, but may be viewed as a progression of events. They indicate that these events may begin with physical loading, progress to discomfort and then to symptoms which possibly lead to restricted physical activities or disability (Adams et al., 2002).

Empirical studies, on the effectiveness of different approaches to management of LBP, suggest that the most effective treatment approach is based on the biopsychosocial model (Gonzales et al., 2000; Guzman et al., 2001b), in which understanding adaptation to the problem is a key to therapy and acceptance of the existing condition is central to management. This model also requires that each person relinquish the search for a cure and engage in the work of learning how to live with pain. These studies were systematic reviews of research conducted in western societies and generalisation of their findings to other societies seem to be difficult due to the influence of culture and psychosocial problems on this process. Moreover,
despite positive research findings in terms of reduction of pain and functional limitations, these studies did not describe which groups of LBP patients would benefit from this model of treatment. Therefore, it would be useful to investigate the Palestinian physiotherapists' opinion about how this approach can be used in management of LBP in the Gaza Strip.

Patient education has been an important part of physiotherapy programmes for LBP for the past two decades based on the belief that understanding the problem of LBP can enhance recovery from back pain (Cohen et al., 1994; Frost et al., 2004). As patients with LBP spend a considerable time with their physiotherapists, there is a significant opportunity for interaction, during which physiotherapists' attitudes may influence the beliefs and attitudes of their patients. A recent study by Houben et al., (2005) reported that physiotherapists holding positive attitudes about biomedical treatment view daily activities as more harmful for a patient with LBP compared with physiotherapists who believe in biopsychosocial management. As one of the objectives of the research reported in this thesis was to explore the attitudes and beliefs of physiotherapists, the researcher felt that an examination of the levels of occupational and domestic activity that Palestinian physiotherapists recommend for patients with LBP in Gaza might contribute to an understanding of the approach they predominantly follow in their management of patients with LBP.

5.3 Method

This part of the study used two Likert-type questionnaires, the Pain Attitude and Beliefs Scale for Physiotherapists (PABS-PT) and the Occupational and Domestic Activities Photographs (ODAP). The PABS-PT questionnaire was mentioned in Section 5.2.3 and is further discussed in Section 5.3.1. The ODAP Questionnaire, designed specifically for Gaza, was based on Kugler et al’s (1999) Photograph Series of Daily Activities (PHODA) and will be described in more detail in Section 5.3.2.

Both questionnaires have the same objectives, conducted in the same language to same population, and were complementary to each other. Both questionnaires have been used in different countries and their authors demonstrated satisfactory levels of
reliability and validity (Kugler et al., 1999; Ostelo et al., 2003). Each questionnaire sought different information and used different point-scales with different number of items. Likert's original scale included five categories:

1. Disagree strongly
2. Disagree
3. Neither agree nor disagree (uncertain)
4. Agree
5. Agree strongly

In a Likert scale instrument, individuals' response scores for a selected set of items are summed to derive the overall score. Likert scoring assumes the value of each item represents equal difficulty and it scores them equally. In addition, the liner response scale used for each item assumes uniform changes across categories. Likert scales have been evaluated in terms of reliability, validity and responsiveness. In general, Likert scaling methods seem to be reliable and valid for its use in routine clinical assessment (Lara-Munoz et al., 2004; Ponce de Leon et al., 2004; Hasson and Arnetz, 2005), although whereas the scales have been seen to be reliable and valid for western cultures, their reliability and validity should be retested to be used in Arab cultures.

Many modifications to this model have been used, sometimes extending it to seven categories (somewhat disagree and somewhat agree) or collapsing it to four categories (eliminating uncertain) (Oppenheim 1992). There is no consensus regarding the number of response categories that should be used. Some researchers suggest that information retrieval is maximized by using six or seven response categories (Hicks 2005). This suggestion has been strengthened by other researchers who believe that the human mind has a span of apprehension capable of distinguishing about seven different items (Moons et al. 2009). Attitude statements are continuous and include positive and negative views about the topic under investigation. Importantly however, the number of categories in the scale should reflect the breadth and differentiation of potential views.

There are a number of other questionnaires that might have been used in the study reported here, so the author considers it important to explain why they were not considered suitable, why PABS-PT was used and why ODAP was developed. The
Health Care Providers’ Pain and Impairment Relationship Scale (HC-PAIRS) is a Likert-scale questionnaire used for assessing attitudes and beliefs of health care and is aimed at measuring attitudes and beliefs of health care providers in general, whereas the PABS-PT is aimed at physiotherapists and related disciplines specifically. The Back Beliefs Questionnaire (BBQ) is a Likert scale that measures beliefs about the inevitability of negative consequences of LBP (Symonds et al., 1996). The aims of the BBQ did not match with the objectives of the research reported here and so was not considered suitable for use.

The PABS-PT, supported by the ODAP questionnaire, matched the objectives of the current study and were found to be the most appropriate tools to investigate attitudes and beliefs of physiotherapists in the Gaza Strip towards LBP and its management. The PABS-PT provided the study with items to investigate both the nature of the problem and its management and was designed specifically to investigate beliefs and attitudes of physiotherapists. Ostelo et al (2003) advised researchers that the PABS-PT questionnaire should be used in conjunction with the PHODA questionnaire, designed by Kugler et al., (1999). Evaluation of the PHODA showed that, whilst the principle of the questionnaire met Objective Two of this research, the photographs used and activities included were inappropriate for use in Gaza. For this reason the ODAP was developed by the author as an appropriate tool. More detail on this is given later in this chapter.

5.3.1 The Pain Attitudes and Beliefs Scale for Physiotherapists (PABS-PT)

This questionnaire was developed at the Department of Epidemiology, Maastricht University in the Netherlands. It was used to examine attitudes and beliefs of physiotherapists about patients with LBP in the Netherlands in 2002 and in the UK in 2003 (Ostelo, et al., 2003). The reliability and validity of the questionnaire were assessed by Ostelo et al. (2003) and Houben et al. (2005) and indicate that the PABS-PT has two features that make it suitable for physiotherapists. First, all items have been developed specifically with this group of therapists in mind and therefore items are representative of views of these therapists. Second, the items are specifically
relevant to LBP. The researcher obtained permission from the authors to use this questionnaire in the Gaza Strip in the study reported here (see Appendices 4 and 5).

The PABS-PT questionnaire consists of three sections. The first section is designed to record socio-demographic characteristics of the participants including age, gender, treatment discipline, work setting and years of experience in the treatment of patients with LBP. The second section includes 64 statements scored on a six-point Likert-type scale (totally disagree, largely disagree, disagree to some extent, agree to some extent, largely agree and totally agree) and aims to identify attitudes and beliefs of respondents about LBP and different approaches and methods of physiotherapy used in its management. For example, "back pain sufferers should refrain from all physical activities in order to avoid injury". In this statement, participants express their beliefs about the effects of physical activity on the progress of back pain symptoms. The third section presents three case studies with different histories and clinical features of LBP. Each case study has four items linked to it, scored on a five-point Likert scale. The first item relates to attitudes and beliefs of physiotherapists about the influence of the patient's symptoms on daily living e.g.; "the influence of this patient's symptoms on daily living are....." The second item identifies physiotherapists' opinions about the relationship between LBP symptoms and spinal pathology; "it is most likely that this patient's symptoms result from spinal pathology which is:....". The third item identifies physiotherapists' recommendations for daily activities of each patient; "I would recommend to this patient that he:...." The fourth item identifies physiotherapists' recommendations on type of work and working hours appropriate for each patient; "I would recommend to this patient that he... ".

English and Arabic copies of the PABS-PT Questionnaire used in this study are found in Appendices 13 and 14.

The PABS-PT questionnaire used a six-point scale in which the central point was eliminated. This gave the physiotherapists no choice to express neutrality; they were enforced to arrange their feelings into positive and negative towards different statements about LBP and its management. This strengthened the ability of the questionnaire to distinguish the different opinions held by physiotherapists about different issues under investigation as LBP is a multifactorial problem. The PABS-PT
questionnaire was used in this thesis because it was a special measurement, designed to measure attitudes of physiotherapists about LBP and its management. It has been used in several published studies with physiotherapists of various disciplines in different countries (Jellema et al., 2005; Bishop et al., 2007).

The PABS-PT seems to be reliable and valid for examination of attitudes of physiotherapists about LBP (Ostelo et al., 2003; Houben et al, 2005; Bishop et al., 2008). Its reliability coefficient of test-retest of has reached a satisfactory level (85%) (Houben 2005). Items focus on and are arranged to measure characteristics of LBP and its management which ensures internal consistency of items and face validity. Although the reliability coefficient of test-retest of this scale has reached a satisfactory level (85%) (Houben 2005), a serious criticism against this type of scale is its lack of reproducibility. This is because the same total score may be obtained in many different ways, and so, it has been argued that such a score has little meanings or that two or more identical scores may have totally different meanings. Another limitation against this type of scale is that since the scale offers no metric or interval measures and lacks a neutral point, we do not know where scores in the middle ranges change from the mildly positive to mildly negative (Hicks 2005).

The final section of the PABS-PT questionnaire used a scoring system requiring the physiotherapist to rate on a five-point scale: very mild, mild, moderate, severe and extremely severe to investigate attitudes of physiotherapists about the impact of certain aspects of LBP on patient's physical activities. This scale differs from that used in the first part of the questionnaire as it is uni-directional, although again it does not provide a "neutral" response. Linearity of both scales may also be questioned as we do not know whether the difference between very mild and moderate (1 & 3) is the same as the difference between moderate and extremely severe (3 & 5) and with regard to the neutral point on the first section of the PABS-PT scale, it is not necessary the midpoint between the two extreme scale scores: scores in the middle region could be due to lukewarm response, lack of knowledge or lack of attitude in the respondent (Silverman 2005; Moons et al., 2009).
5.3.1.1 validity of the Pain Attitude and Beliefs Scale for physiotherapists (PABS-PT)

The authors of the PABS-PT examined its ability to determine attitudes of 420 physiotherapists, using factor analysis (Ostelo et al., 2003, Houben et al., 2005). They stated that the principal factor analysis of the PABS-PT yielded an interpretable two-factor model. Based on highest loading items, factor 1 was labeled "biomedical" whereas factor 2 was labeled as "biopsychosocial". The internal consistency (Cronbach's Alpha) of factor 1 was 0.84 and for factor 2, 0.54 explaining 25.2% and 8.2% respectively, of the total variance. The internal consistency of item 1 was satisfactory while factor 2 was only just acceptable statistically and needed improvement. Theoretically, factor 2 could be improved by adding some items of the biopsychosocial perspective and/or use of physiotherapists who are highly specialized in treatment of LBP, as they more likely to achieve extreme scores (Hicks 2005; Bishop et al., 2007). In the current study, the researcher relied on reliability and validity obtained by published work (Ostelo et al., 2003; Houben et al., 2005; Bishop et al., 2007) and followed their recommendations. The validity of the PABS-PT was enhanced, however, by being accompanied by the ODAP as recommended by the authors of the questionnaire and Kugler et al., (1999) who suggested that the validity of the PABS-PT can be increased by the use of external criteria. The possible external criterion was the Photograph series of Daily Activities (PHODA) which was carried out in the current thesis.

Underlying dimensions uncovered from the set of variables assessed in the questionnaire were similar to the biomedical and biopsychosocial treatment orientations (Brown 2001). The authors of the questionnaire evaluated its ability to discriminate between biomedical and biopsychosocial approaches, using factor analysis on the responses of 137 physiotherapists, who had attended specific education courses on approaches to chronic back pain (Ostelo et al., 2003). Analysis indicated that physiotherapists within a biomedical specialty scored higher on the biomedical attitudes and beliefs factor, while those who had attended courses in biopsychosocial approaches scored higher on the second factor. The authors of the
PABS-PT suggested that scores do not indicate that biomedical and biopsychosocial beliefs and attitudes are two opposites as responses may indicate that respondents display both attitudes but stronger responses are observable towards one factor or the other.

Houben et al, (2005) examined the validity of the PABS-PT by comparison with measures of related concepts, such as; general health care provider attitudes (Rainville et al., 1995), general beliefs about back pain (Symonds et al., 1996), and fear-avoidance beliefs (Vlaeyen et al., 1995). Kugler et al (1999) also tested the hypothesis that PABS-PT scores would predict judgments of the harmfulness of daily activities depicted in photographs by analyzing responses from 297 paramedical therapists on the perceived harmfulness of 41 daily physical activities depicted in photographs. Analysis strongly suggested two factors labeled biomedical and biopsychosocial attitudes and beliefs. Scores on both factors of the PABS-PT were related to measures of related concepts (beliefs) of each approach and both factors were consistent predictors of judgments about the harmfulness of physical activities and of recommendations for return to work and normal activity (Houben et al., 2005). Both studies, Ostelo et al., (2003) and Houben et al., (2005) suggested that the PABS-PT is able to measure attitudes and beliefs of physiotherapists about LBP and to determine which approach to management they habitually use. It was because of the demonstrated validity of PABS-PT and its focus of physiotherapists that it was used in research reported in this thesis, investigating attitudes and beliefs of physiotherapists about LBP and its management in the Gaza Strip.

The English version of the questionnaire PABS-PT was translated into Arabic, because that was the first language of the physiotherapists in the Gaza Strip. Although validity of the questionnaire has been demonstrated, the researcher was aware that translation into another language may affect the validity of the PABS-PT. For this reason, a well-established approach to translation, that of “back translation” was used (Oppenheim, 1992). Firstly, the researcher and three physiotherapists, fluent in both languages, translated the English version of the questionnaire into Arabic. Secondly, another three physiotherapists made an independent translation of the Arabic version into English. Thirdly, two physiotherapists and the researcher compared the original and the new English versions for accuracy of wording and meaning. Lastly, the
researcher asked seven physiotherapists to determine if any statements in the Arabic version were unclear or misleading.

As a result of comments made, some minor changes were made to the Arabic questionnaire before printing the final document. Changes included dividing Statement 28; "TENS and/or back braces support functional recovery" into two statements: (1) "TENS supports functional recovery" and (2) "Back braces support functional recovery". In accordance with Arab custom, a few phrases were added to the introduction to welcome the participants, for example, the introduction began with the words; "Dear colleague, alsalam alikom (peace be upon you)". Because of Gazan physiotherapists' unfamiliarity with questionnaire completion, one example was provided to assist participants in answering questions. Dividing Statement 28 into two statements increased the number of items in the Arabic questionnaire to 65 items, compared to 64 items as appeared in the original questionnaire. All other items remained the same. For the current research, the combination of the PABS-PT and the ODAP was therefore seen as being the most appropriate, effective means of exploring attitudes to LBP and its treatment.

5.3.2 Occupational and Domestic Activities Photographs (ODAP) Questionnaire

As stated before, this questionnaire was adapted from the Photograph Series of Daily Activities (PHODA) developed by Kugler et al. (1999) and modified by Ostelo et al., (2003). The PHODA consists of 41 photographs depicting different daily activities in western societies (Appendix 15). It was originally hoped to use this questionnaire, after translating it into Arabic, for use in Gaza. However the differences of social roles and economic status between western societies and the Gaza Strip became apparent, for example some of the activities portrayed gymnastic and sporting activities and many work and domestic activities which were not common in the Gaza Strip. On reflection, it was thought that the daily activities and the context in which they were performed, was so different from the activities and context of life in Gaza, that it invalidated the use of PHODA. For this reason it was decided to develop a
photographic-based questionnaire that related to life in Gaza, the Occupational and Domestic Activities Photographic Questionnaire (ODAP).

The ODAP (Appendix 16) presented 39 numbered photographs depicting several occupational and domestic activities in the Gaza Strip. Physiotherapists were asked to rate each of the activities recorded in the photographs on a seven-point scale (ranging from 'not harmful at all' to 'extremely harmful') according the level of harm they judged each activity to be for patients with LBP. The questionnaire was developed in the Arabic language (Appendix 17) and translated into English by professional translators who had not been involved in translating PABS-PT. The same Likert-type scale and instructions were used as had been used in the PHODA questionnaire. A section (similar to that in the PABS-PT) was added to the ODAP denoting participants’ age, gender and experience in the management of LBP. This section was added to the ODAP because the researcher felt that some participants might not return both questionnaires.

The aim of developing the ODAP was to increase the validity of the PABS-PT questionnaire as recommended by Ostelo et al., (2003) and Houben et al., (2005), and to determine what physiotherapists in the Gaza Strip recommend for LBP patients with regard to return to normal activity. It was expected that physiotherapists’ responses to the written statements in PABS-PT would be made clearer by responses to photographs in ODAP.

The ODAP questionnaire used a seven-point scale which gave chance to the physiotherapists to express neutrality, through a range of seven points, about their recommendations for some physical activities for patients with LBP. This is because the literature shows that some physiotherapists are reluctant about their recommendations on physical activities for patients with LBP (Bishop and Foster 2005; Bishop et al., 2008). As demonstrated in the thesis, LBP is a multifactorial unpleasant sensory experience which is influenced by different psychosocial aspects (Gatchel et al. 2005). In such a case, using a seven-point scale gave physiotherapists who did not have strong feelings a viable option to express that attitude. Consequently, it would provide different levels of scores that could describe the general opinion.
Reliability and validity of the ODAP was assessed and achieved by collection, selection and arrangement of items and the respondents' item scoring on the questionnaire. Collection of items of the ODAP started with creating an item pool in which the researcher discussed the common daily activities, domestic and work activities of both genders in Gaza with gender-specific groups of physiotherapists and patients with LBP.

5.3.2.1 Item collection and expert reviewing

The researcher discussed common activities of daily living in the Gaza Strip with two gender-specific groups of five physiotherapists and six individuals with low back pain (3 males and 3 females) before starting the process of photographing. This initial spadework provided a guide to the physical activities that must be covered by the ODAP questionnaire. Individuals involved in this process independently selected their own physical activities in the first instance which then were discussed, compared and shared. This approach demonstrated that a full range of perspectives and facets on the topic was covered. It reflected not only face validity but also construct validity of the ODAP.

The initial item pool was enhanced by asking independent groups of physiotherapists who had experience in management of patients with LBP, to select the photographs that meet the objectives of the study (Portney and Watkins 1993; Moons et al. 2009). One group selected 28 photographs and the other group selected 31 photographs, some of which were common to both groups. There was a considerable degree of overlap and duplicate items had been eliminated. The outcome of this process was the selection of 39 out of 72 photographs to be included in the final version of the questionnaire. The process of creating and refining the item pool indicated that face validity, some preliminary content validity and test-retest reliability were achieved (Hicks 2005; Hill et al., 2011).

Since the aim was to determine the recommendations of physiotherapists in relation to common daily activities, photographs selected included religious items, as well as domestic and work activities. Religious items were included because of the
importance of religious practice and the specific positions adopted for prayer by Muslims in Gaza.

The developed tool (ODAP) included 39 photographs while the original tool (PHODA) includes 41 photographs. The purpose of both questionnaires was to identify attitudes of physiotherapists towards various physical activities of patients with LBP that would enhance validity of the PABS-PT (Kugler et al. 1999; Ostelo et al., 2003). The combination of both questionnaires has strengthened their ability to measure attitudes of physiotherapists towards LBP and its management by collecting more data that contributed to building up attitudes and beliefs of physiotherapists about the investigated topic.

The ODAP used the same introduction and point scale used in the PHODA but physical activities under investigation were different. Items of PHODA depict different physical activities performed by people in industrial societies which are different from those activities performed by people in Gaza. Therefore change of items was necessary to ensure that the tool measures what the researcher was trying to measure, but the ODAP was sufficiently similar to the PHODA to suggest that it would share aspects of reliability and validity.

5.3.3 Pilot testing

Testing the first draft of the questionnaire is part of the reliability-testing procedure (Oppenheim 1992). It aimed to establish whether the scale measured the same attitude each time it was used. The ODAP was piloted before usage. The PABS-PT and ODAP questionnaires were piloted by using seven physiotherapists from the target population. After completion of the questionnaires they were asked for comments regarding wording of questions, the letter of introduction, ordering of questions and ease of scoring questions. Participants made no comments about any of these issues and described both questionnaires as clear and measurable. Statistical analysis of pilot data showed good internal consistency of items in both questionnaires. This indicated that each item on the ODAP related to every other item and to the ODAP questionnaire as a whole. Item analysis identified which items were the most sensitive
and had the greatest power to discriminate between different strengths of attitude. This process of item analysis could be considered as item reliability and contributed to the ODAP's construct validity (Hicks 2004).

5.3.4 Study sample

The researcher visited all physiotherapy practices in both primary and the secondary health care sectors in the Gaza Strip in order to recruit participants. Participants were selected according to the following criteria;

- Degree- qualification in physiotherapy.
- At least three years experience in treatment of patients with LBP.
- Not involved in the piloting and translation aspects of the study.

All physiotherapists in the Gaza Strip who met the inclusion criteria were invited to take part in the study. Eighty three physiotherapists were recruited and received the two questionnaires. Seventy six physiotherapists completed both questionnaires, one physiotherapist completed only the PABS-PT questionnaire and there were 6 non-respondents.

5.4 Data collection

Paper copies of the questionnaires were delivered by the researcher to 83 physiotherapists who regularly treated patients with NSLBP in their clinical settings in the Gaza Strip. The physiotherapists were informed that the purpose of this research was to explore the opinion of physiotherapists about patients with the most common forms of LBP, (excluding back pain resulting from a radicular syndrome, cauda equina syndrome, fractures, infection, inflammation, a tumour or metastasis) and how they approach those patients. Because of the researcher’s relationship with some physiotherapists, he asked participants to complete the two questionnaires and to hand them in a week later to the head of the department in each clinical setting. It was felt that a strategy of distancing the researcher from the collection of completed questionnaires would reduce any feeling of coercion from participants who had been taught by him. Completed questionnaires were collected from the head
physiotherapist in each location. It was not possible to identify participants by name or address and no reminders were sent to those who did not return the questionnaires. Data were kept safe in a locked cabinet in an office in the researcher’s house.

5.5 Ethical approval

Ethical approval for this study was obtained from the Ministry of Health, the Physical Therapy and Rehabilitation Directorate in the Gaza Strip, and the School Ethics Panel at the School of Health Professions, University of Brighton (see Appendices 1 and 2). All physiotherapists with three, or more years, experience of treating patients with LBP in the Gaza Strip were invited to take part in the study.

5.6 Statistical analysis

Data obtained from both questionnaires were analysed using descriptive and inferential statistics. The aim of data analysis was to identify the physiotherapists’ opinion about the nature of LBP and its management in the Gaza Strip, and to explore the relations between characteristics of participants and their clinical behaviour. Each questionnaire was analysed independently and the following two sections provide details of data analysis of each questionnaire. All analyses were performed using the Statistical Package for the Social Sciences (SPSS 14).

5.6.1 Pain Attitudes and Beliefs Scale for Physiotherapists (PABS-PT) Questionnaire

Distribution frequencies of socio-demographic variables of participants were calculated to identify characteristics of participants. To assess the physiotherapists’ attitudes and beliefs about the various nature of LBP and its management, the mean score and standard deviation of each item were calculated. Assessment of physiotherapists’ recommendations about return to normal levels of activity and work for the three case studies with differing histories and symptoms was performed by calculating the mean and standard deviations of all responses for each case.
To assess attitudes and beliefs of physiotherapists about physiotherapeutic approaches to the management of LBP, the items of the PABS-PT were categorized into biomedical and biopsychosocial perspectives. Items which were related to beliefs in the biomedical approach were grouped in one list while items which related to beliefs in the biopsychosocial approach were grouped in another list. It was hypothesised that physiotherapists with biomedical model beliefs and attitudes would consider pain to be due to a bio-psycho-social as physical pain (Ostelo et al., 2003), view daily activities of patients with LBP as harmful and would often advise patients to limit daily activity and level of work (Sullivan, 2001; Houben et al., 2005). A possible reason for this is that physiotherapists with biomedical attitudes see pain solely in terms of pathological changes in the lumbar spine and that avoidance of activity might be argued as a means of allowing ‘healing’ of the pathological changes to take place. It was also hypothesised that physiotherapists with biopsychosocial attitudes would not advise patients with LBP to refrain from physical activities. These two categories are not the two opposites of the same scale, as respondents may indicate preference for items from both lists. The biomedical list included items 1,2,4,5,9,10,13,14,15,18,20,21,22,23,24,25,26,28,29,31,32,36,39,40,41,42,45,46,47,48,49,52,53,55,56,58,59,61,62,63,65. The biopsychosocial list included items 3,6,7,8,11,12,16,17,19,27,30,33,34,35,37,38,43,44,50,51,54,57,60,64. The two groups of biomedical and biopsychosocial statements are presented in Appendix 18. However, the total scores would indicate a bias towards one or other of the two approaches, which is considered to reflect participants’ views about LBP and its management (Ostelo et al., 2003).

The internal consistency of both categories (the biomedical and biopsychosocial) was determined to examine possible correlations between scores, by calculating Cronbach’s alpha from a reliability analysis of each category. To explore the difference between biomedical and biopsychosocial approaches, the mean score of each item on each category was calculated and compared using paired sample t-test for each category. For the purpose of this study, the researcher used the total score of each group to explore the relationship between attitudes of participants and their socio-demographic characteristics. To explore the effect of the variables of gender and age on the scores of both groups, mean scores and standard deviations of gender, age and both therapeutic approaches were computed. Then, independent sample t-test
was used to explore differences in scores of both therapeutic approaches because of age and gender of participants. This test is a parametric test for comparing two means for independent samples and therefore it was appropriate to compare such means.

The possible effects of the physiotherapists' experience and predominant method of treatment used for LBP on the scores for the biomedical and biopsychosocial approaches was assessed by non-parametric statistical analysis using the Kruskal-Wallis Test. This test allowed comparing more than two independent groups representing levels of one independent variable. The relationship between work setting and scores on the biomedical and biopsychosocial approaches was explored by using a one-way ANOVA to determine differences in attitudes and beliefs of physiotherapists in different work settings. This test is appropriate way to handle ordinal level data when more than two groups are compared.

5.6.2 Occupational and Domestic Activities Photograph (ODAP) Questionnaire

To investigate physiotherapists' recommendations for daily activities for patients with LBP, mean scores and standard deviations of scores accorded to each photograph were computed. Non-parametric statistics (Mann-Whitney U and Kruskal-Wallis tests) were used to explore relationships between scores on each item and the socio-demographic characteristics of participants. The Mann-Whitney U test was used for comparing two independent groups while Kruskal-Wallis tests were used for comparing more than two independent groups of data.

5.7 Results

Scores obtained from both questionnaires used with physiotherapists in this study have provided for the first time descriptions of the Palestinian physiotherapists' opinion about the nature and management of LBP. Statistical analysis of these scores highlighted the relations between characteristics of the study participants and their clinical behaviour. The following sections presents the results obtained from the PABS-PT and ODAP questionnaires.
5.7.1 Results from PABS-PT

5.7.1.1 Socio-demographic characteristics of participants

Fifty two male physiotherapists (67.5%) and twenty five female physiotherapists (32.5%) with an average age of 33 years (SD = 7.2, range 26-52 years) were included in the analysis. The average length of work experience was 7.9 years (SD = 6.4, range 3-27 years), and length of work experience with LBP patients was 7.64 years (SD = 6.37, range 3-27 years). Main work location (42 hours per week) was in hospital (in and out-patient physiotherapy) for 45 physiotherapists (58.4%), in rehabilitation centres for 17 participants (22.1%), in UNRWA and non-governmental organisations (NGOs) out-patient physiotherapy clinics for 11 people (14.3%) and 4 physiotherapists (5.2%) worked in private practice. Of the total, 43 physiotherapists (60%) also worked additional hours ranging between 2 and 30 hours per week. Table 5.1 summarises the socio-demographic characteristics of the sample.

Where only one procedure was used in treatment then the predominant treatment method used was exercise (63.6%), followed by electrotherapy (19.5%), manual massage (9.1%), heat application (5.2%), advice (1.3%) and bed rest (1.3%). However, in practice, participants indicated that their programme of treatment for patients with LBP usually included a combination of more than one method of physiotherapy. In such a combined programme, 63.6% indicated that they used exercise therapy, 83.1% used electrotherapy, 92.2% provided manual massage, 97.4% used heat applications, 98.7% provided advice and 100% recommended rest for their patients. This difference in data is accounted for by differences in answers to these two questions.

The results highlighted that physiotherapists in Gaza used combined techniques of physiotherapy in the treatment of LBP, with 63.6% of physiotherapists providing exercise, either alone or combined with other methods of physiotherapy. The scores highlighted that physiotherapists preferred to use several methods of physiotherapy in combination but there might be, within a treatment programme a predominant
method. Table 5.2 shows predominant and combined methods of physiotherapy used in treatment of LBP in the Gaza Strip.

**Table 5.1: Socio-demographic variables of the physiotherapists who completed the PABS-PT Questionnaire**

<table>
<thead>
<tr>
<th>Socio-demographic variable</th>
<th>Number of respondents</th>
<th>Percentage of group responding</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>52</td>
<td>67.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>25</td>
<td>32.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>77</td>
<td>100</td>
<td>33</td>
<td>7.20</td>
<td>26-52</td>
</tr>
<tr>
<td>Experience in physiotherapy practice</td>
<td>77</td>
<td>100</td>
<td>7.90</td>
<td>6.40</td>
<td>3-27</td>
</tr>
<tr>
<td>Experience in treatment of low back pain</td>
<td>77</td>
<td>100</td>
<td>7.64</td>
<td>6.37</td>
<td>3-27</td>
</tr>
<tr>
<td>Place of full time work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hospital</td>
<td>45</td>
<td>58.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rehab.</td>
<td>17</td>
<td>22.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centres</td>
<td>11</td>
<td>14.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNRWA and NGOs</td>
<td>4</td>
<td>5.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private practice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5.2: Methods of physiotherapy used in treatment of LBP in Gaza

<table>
<thead>
<tr>
<th></th>
<th>Predominant single method (%)</th>
<th>Within combined programme (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise</td>
<td>63.6</td>
<td>63.6</td>
</tr>
<tr>
<td>Electrotherapy</td>
<td>19.5</td>
<td>83.1</td>
</tr>
<tr>
<td>Massage</td>
<td>9.1</td>
<td>92.2</td>
</tr>
<tr>
<td>Heat</td>
<td>5.2</td>
<td>97.4</td>
</tr>
<tr>
<td>Advice</td>
<td>1.3</td>
<td>98.7</td>
</tr>
<tr>
<td>Rest</td>
<td>1.3</td>
<td>100</td>
</tr>
</tbody>
</table>

5.7.1.2 Physiotherapists' opinions about low back pain

Section Two of the PABS-PT questionnaire consisted of 65 items, written in the form of statements, and participants were required to indicate if they agreed or disagreed with them, the choices for response were:

<table>
<thead>
<tr>
<th>Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totally disagree</td>
<td>1</td>
</tr>
<tr>
<td>Largely disagree</td>
<td>2</td>
</tr>
<tr>
<td>Disagree to some extent</td>
<td>3</td>
</tr>
<tr>
<td>Agree to some extent</td>
<td>4</td>
</tr>
<tr>
<td>Largely agree</td>
<td>5</td>
</tr>
<tr>
<td>Totally agree</td>
<td>6</td>
</tr>
</tbody>
</table>

The mean score for each item was calculated and Table 5.3 shows the 14 statements which produced mean scores of less than 3.5 with small standard deviations. This score of less than 3.5 indicated that the participants disagreed with these items. Table 5.3 also included Items 46, 47 & 50 which had mean scores of 4.5 or higher and small standard deviations indicating that most participants agreed with these items. For all the other items the scores indicated neither strong agreement of disagreement.

Physiotherapists strongly disagreed with the notion that a diagnosis of LBP indicates “that there is something dangerously wrong” (Item 15), and “patients should refrain
from all physical activities” (Item 1). They strongly disagreed that “knowledge of the tissue damage is not necessary for effective therapy” (Item 3) and that “imaging tests are unnecessary in back pain” (Item 37). With regard to the causes of LBP (Items 7+8), physiotherapists disagreed that the cause of LBP is unknown and that “unilateral physical stress” is not a cause. They also disagreed with the notion that back pain indicates the presence of organic injury (Item 20), and that severity of pain refers to something potentially dangerous going on in the body (Item 59).

Furthermore, physiotherapists believed that patients with chronic LBP are not necessarily disabled or handicapped and that chronic pain would not “put their bodies at risk for the rest of their life” (Items 42, 48 & 56). They also believed it is safe for such patients to be physically active” (Item 62) and pain would not increase if a patient attempts to overcome it (Item 53). On the other hand, they thought it dangerous if daily physical activities caused more back pain (Item 19). It was also agreed that LBP impacts on patients' lives and thinking (Items 46, 47 and 50). All other items relating to the nature of LBP showed mean scores considered to lie in the middle range with slightly wider standard deviations, indicating that for these items neither strong agreement nor disagreement existed.

These results indicate that physiotherapists in the Gaza Strip believe that LBP is a physical problem, requiring imaging tests, that engaging in physical activities could be dangerous if more pain develops and LBP impacts on patient's life and thinking. On the other hand, physiotherapists believed that LBP is not dangerous and would not necessarily lead to physical disability.
<table>
<thead>
<tr>
<th>Item No</th>
<th>Item Description</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Back pain sufferers should refrain from all physical activity in order to avoid injury</td>
<td>2.19</td>
<td>1.05</td>
</tr>
<tr>
<td>3</td>
<td>Knowledge of the tissue damage is not necessary for effective therapy</td>
<td>2.01</td>
<td>1.32</td>
</tr>
<tr>
<td>7</td>
<td>The cause of low back pain is unknown</td>
<td>2.78</td>
<td>1.34</td>
</tr>
<tr>
<td>8</td>
<td>Unilateral physical stress is not a cause of back pain</td>
<td>2.26</td>
<td>1.37</td>
</tr>
<tr>
<td>15</td>
<td>Back pain indicates that there is something dangerously wrong with the back</td>
<td>2.22</td>
<td>1.66</td>
</tr>
<tr>
<td>19</td>
<td>If ADL activities cause more back pain, this is not dangerous</td>
<td>2.83</td>
<td>1.35</td>
</tr>
<tr>
<td>20</td>
<td>Back pain indicates the presence of organic injury</td>
<td>3.27</td>
<td>1.42</td>
</tr>
<tr>
<td>37</td>
<td>In back pain, imaging tests are unnecessary</td>
<td>1.63</td>
<td>1.14</td>
</tr>
<tr>
<td>42</td>
<td>Chronic back pain patients should have the same benefits as the handicapped because of their chronic pain problem</td>
<td>2.99</td>
<td>1.53</td>
</tr>
<tr>
<td>46</td>
<td>As long as they are in pain, chronic back pain patients will never be able to live as well as they did before</td>
<td>4.41</td>
<td>1.40</td>
</tr>
<tr>
<td>47</td>
<td>When the pain gets worse, chronic back pain patients find it very hard to concentrate on anything else</td>
<td>4.53</td>
<td>1.32</td>
</tr>
<tr>
<td>48</td>
<td>Chronic back pain patients have to accept that they are disabled persons, due to their chronic pain</td>
<td>2.35</td>
<td>1.33</td>
</tr>
<tr>
<td>50</td>
<td>Chronic back pain patients find themselves frequently thinking about their pain and what it has done to their life</td>
<td>4.71</td>
<td>1.05</td>
</tr>
<tr>
<td>53</td>
<td>If a back pain patient were to try to overcome their pain, it would increase</td>
<td>3.37</td>
<td>1.45</td>
</tr>
<tr>
<td>56</td>
<td>Back pain puts a patient’s body at risk for the rest of their life</td>
<td>3.03</td>
<td>1.31</td>
</tr>
<tr>
<td>59</td>
<td>A patient with back pain wouldn’t have this much pain if there weren’t something potentially dangerous going on in their body</td>
<td>2.99</td>
<td>1.28</td>
</tr>
<tr>
<td>62</td>
<td>It is really not safe for a patient with back pain to be physically active</td>
<td>3.40</td>
<td>1.47</td>
</tr>
</tbody>
</table>
5.7.1.3 Physiotherapists’ opinions about the management of low back pain

Table 5.4 shows the responses to the questions that explored physiotherapists' opinions about the management of LBP. Physiotherapists’ disagreed that exercise could cause damage (Item 31), but they would not provide exercises that may strain the back (Item 35). Furthermore, physiotherapists believed that LBP could be eliminated by effective treatment (Item 27), and the severity of pain determines the intensity of next treatment (Item 30).

Data showed consistently high mean scores of more than 4.5 with small standard deviations for a number of questions (see Table 5.4). These scores indicate that physiotherapists strongly agreed with the notion that patients with chronic LBP have to be careful not to do anything that might make their pain worse (Item 45), with reduction of daily physical exertion a significant factor in management (Item 4). Furthermore, physiotherapists agreed that pain is caused by tissue damage and that good posture prevents LBP (Item 2). They believed that patients with LBP should avoid activities that stress the back (Item 9) and practice only pain free movements (Item 14). Scores indicated that physiotherapists agree that therapy can completely alleviate the functional symptoms caused by back pain (Item 18) and that pain reduction is a precondition for the restoration of normal functioning (Items 24, 33 & 39), indicating that Gazan physiotherapists believe there is a relationship between pain and back function. Participants also believe that exercises are beneficial, level of pain determines the intensity of treatment, and over all, physiotherapy is effective in the management of LBP. Table 5.4 shows a summary of these opinions.
Table 5.4: Physiotherapists' opinions about the management of LBP

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item description</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Good posture prevents low back pain</td>
<td>4.69</td>
<td>1.31</td>
</tr>
<tr>
<td>4</td>
<td>Reduction of daily physical exertion is a significant factor in treating back pain</td>
<td>5.01</td>
<td>1.03</td>
</tr>
<tr>
<td>9</td>
<td>Patients who have suffered back pain should avoid activities that stress the back</td>
<td>4.96</td>
<td>1.31</td>
</tr>
<tr>
<td>14</td>
<td>Patients with back pain should preferably practice only pain free movements</td>
<td>4.47</td>
<td>1.29</td>
</tr>
<tr>
<td>18</td>
<td>Therapy can completely alleviate the functional symptoms caused by back pain</td>
<td>4.41</td>
<td>1.29</td>
</tr>
<tr>
<td>24</td>
<td>Pain reduction is a precondition for the restoration of normal functioning</td>
<td>4.75</td>
<td>1.25</td>
</tr>
<tr>
<td>27</td>
<td>There is no effective treatment to eliminate low back pain</td>
<td>3.27</td>
<td>1.50</td>
</tr>
<tr>
<td>30</td>
<td>Even if the pain has worsened, the intensity of the next treatment can be increased</td>
<td>2.62</td>
<td>1.38</td>
</tr>
<tr>
<td>31</td>
<td>If patients complain of pain during exercise, I worry that damage is being caused</td>
<td>2.95</td>
<td>1.18</td>
</tr>
<tr>
<td>33</td>
<td>A rapid resumption of daily activities is an important goal of the treatment</td>
<td>4.79</td>
<td>1.37</td>
</tr>
<tr>
<td>35</td>
<td>Exercises that may be back straining should not be avoided during the treatment</td>
<td>2.42</td>
<td>1.47</td>
</tr>
<tr>
<td>39</td>
<td>An increase in pain is an indicator that a chronic back pain patient should stop what he is doing until the pain decreases</td>
<td>4.51</td>
<td>1.22</td>
</tr>
<tr>
<td>45</td>
<td>Chronic back pain patients have to be careful not to do anything that might make their pain worse</td>
<td>5.09</td>
<td>1.32</td>
</tr>
</tbody>
</table>
5.7.1.4 Physiotherapists’ opinions about return to normal daily activities for patients with low back pain

Section 3 of the PABS-PT questionnaire included three case studies that aimed to investigate physiotherapists’ opinions about return to normal activity and previous work level. The normal activity scale ranged from “not limit any activities”, “avoid only painful activities”, “limit activities to moderate exertion”, “limit activities to light exertion” to “limit all physical activities”. The work level scale ranged from “work full time, full duty”, “work full time, moderate duty”, “work full time, light duty”, “work part time, light duty” to “remain off work”.

As can be seen from Table 5.5, all mean scores lie in the middle range, suggesting that participants were either cautious in their approach to this condition, or unable to precisely decide on the level of physical activity and work that case study patients should undertake.

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>activity level</td>
<td>2.95</td>
</tr>
<tr>
<td></td>
<td>work level</td>
<td>3.52</td>
</tr>
<tr>
<td>Case 2</td>
<td>activity level</td>
<td>2.52</td>
</tr>
<tr>
<td></td>
<td>work level</td>
<td>2.64</td>
</tr>
<tr>
<td>Case 3</td>
<td>activity level</td>
<td>3.36</td>
</tr>
<tr>
<td></td>
<td>work level</td>
<td>3.28</td>
</tr>
</tbody>
</table>

5.7.1.5 Physiotherapy approaches used in the management of low back pain

It is suggested in the literature on LBP that physiotherapeutic management of pain broadly follows either a biomedical or a biopsychosocial approach (Daykin and
Richardson, 2004; Houben et al., 2005). Ostelo et al., (2003) examined attitudes and beliefs of physiotherapists about LBP by identifying the approaches they used in the management of patients. They suggested that the approach used by a physiotherapist in treatment of back pain reflects his/her attitudes and beliefs about the problem of back pain. As mentioned in Section 5.6.1, the statements of the PABS-PT questionnaire were grouped as to whether they reflected a biomedical and biopsychosocial bias (see Appendix 18).

Results from this Palestinian study indicated higher scores on the biomedical items than the biopsychosocial items and lower scores for most biopsychosocial items, suggesting that Gazan physiotherapists’ predominant approach to LBP was biomedical.

Examples of high scoring items (where the participants agreed with the statements) in the biomedical category are:

'\text{Reduction of daily physical exertion is a significant factor in treating back pain'} (Item 4).

'\text{Chronic back pain patients have to be careful not to do anything that might make their pain worse'} (Item 45).

'\text{Pain reduction is a precondition for the restoration of normal functioning'} (Item 24).

'\text{As long as they are in pain, chronic back pain patients will never be able to live as well as they did before'} (Item 46).

Examples of low scoring items (where the participants did not agree) for biopsychosocial items are:

'\text{The cause of low back pain is unknown'} (item 7).

'\text{In back pain, imaging tests are unnecessary'} (item 37).

'\text{Psychological factors are associated with functional limitations'} (item 12).

'\text{Mental stress can cause back pain even in the absence of tissue damage'} (item 6).

To demonstrate the internal consistency of items making up the biomedical and biopsychosocial categories, a reliability analysis on each category was conducted to calculate Cronbach’s Alpha. This is a test of reliability that measures how well a set of items measures a single uni-dimensional latent construct, such as biomedical and
biopsychosocial approach (Allen and Yen 2002). The biomedical category (41 items) showed an Alpha value of 0.79 which demonstrates acceptable statistical consistency. The biopsychosocial category (24 items) showed an Alpha value of 0.55 which demonstrates a less than acceptable consistency. Alpha value refers to sample error (Type I error) and can be set at 5% to 1% (Portney and Watkins (1993). The value above indicates an acceptable risk of recommending one approach over the other when the two approaches are not really different. Comparing mean scores of both approaches indicated significant difference in the attitudes and beliefs towards each approach \((P = 0.001)\), suggesting that physiotherapists follow a biomedical approach in the management of patients with LBP. This level of significant indicates that the majority of participants followed the medical model in treatment of LBP.

Although data showed overall significantly higher scores for biomedical approach items and lower scores for biopsychosocial approach items, there were some higher scores recorded for a few biopsychosocial items. Physiotherapists agreed that patients’ view of their pain influences the progress of the symptoms (Item 16), that learning to cope with stress promotes recovery from back pain (Item 34). They also agreed that patients can fulfil work and family responsibilities despite pain (Item 38) and that exercise would probably relieve LBP (Item 54). These items are presented in Table 5.6.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item description</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>The way patients view their pain influence the progress of the symptoms</td>
<td>4.30</td>
<td>1.02</td>
</tr>
<tr>
<td>34</td>
<td>Learning to cope with stress promotes recovery from back pain</td>
<td>4.77</td>
<td>1.22</td>
</tr>
<tr>
<td>38</td>
<td>Chronic back pain patients can still be expected to fulfil work and family responsibilities despite pain</td>
<td>4.45</td>
<td>1.18</td>
</tr>
<tr>
<td>54</td>
<td>The back pain would probably be relieved if a patient were to exercise</td>
<td>4.82</td>
<td>0.98</td>
</tr>
</tbody>
</table>
5.7.1.6 Relationships between characteristics of physiotherapists and scores on the questionnaire

Ostelo et al., (2003) and Houben et al., (2005) suggested that scores of participants on each therapeutic approach (biomedical and biopsychosocial) determine attitudes and beliefs of participants about LBP and its management. For this reason, the researcher analysed possible relationships between total scores of items of each category (biomedical, biopsychosocial) and characteristics of participants.

5.7.1.6.1 Gender and age

To explore the effects of gender and age, (using a cut-off point of 31 years old as the median score) on the scores of both approaches, mean scores and standard deviations were computed for the different categories of each variable. These mean scores of both, categories ('male and female' and 'below 31 years, and above 31 years') were computed using independent sample t-tests for each therapeutic approach (biomedical, biopsychosocial). Table 5.7 summarises the results, the theoretical range of scores, mean scores with standard deviations, and the range of the entire sample. The variables, age and gender, did not show significant differences for biomedical and biopsychosocial categories. This suggests that age and gender of physiotherapists did not influence their opinions about the nature and management of LBP.
Table 5.7: The effects of gender and age on scores of the biomedical and biopsychosocial categories

<table>
<thead>
<tr>
<th>Socio-demographic variable</th>
<th>Total number</th>
<th>Percentage</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Male</td>
<td>52</td>
<td>67.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Female</td>
<td>25</td>
<td>32.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>77</td>
<td>100</td>
<td>33</td>
<td>7.2</td>
<td>26-52</td>
</tr>
<tr>
<td>Experience in physiotherapy practice</td>
<td>77</td>
<td>100</td>
<td>7.9</td>
<td>6.4</td>
<td>3-27</td>
</tr>
<tr>
<td>Experience in treatment of low back pain</td>
<td>77</td>
<td>100</td>
<td>7.64</td>
<td>6.37</td>
<td>3-27</td>
</tr>
<tr>
<td>Place of full time work (42 hours per week)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• hospital</td>
<td>45</td>
<td>58.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Rehab. Centres</td>
<td>17</td>
<td>22.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• UNRWA and NGOs</td>
<td>11</td>
<td>14.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Private practice</td>
<td>4</td>
<td>5.2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.7.1.6.2 Physiotherapists’ experience of treating patients with low back pain

Data showed that 43 physiotherapists of the sample (77) had 3-5 years experience in treating patients with low back pain, 13 had 6-8 years and 21 had 9 or more years. To assess the effect of the experience of physiotherapists on their attitudes towards the management of LBP, the three categories of experience were compared with scores for biomedical and biopsychosocial categories. This was performed by using a nonparametric Kruskal-Wallis Test. The purpose of using this test was to compare more than two independent data representing levels of one independent variable. Physiotherapists’ experience did not show any differences in any of the categories and the p-value was 0.635 for the biomedical items and 0.741 for the biopsychosocial items. This suggests that physiotherapists’ length of experience did not change their attitudes towards LBP and its management.
5.7.1.6.3 Work setting of physiotherapists

Physiotherapists who participated in this study were recruited from different physiotherapy clinics in the Gaza Strip, such as private clinics, hospitals, rehabilitation centres and other clinical settings run by NGOs. It was expected that in NGO work settings, such as rehabilitation centres and private clinics, physiotherapists would maintain a better standard of practice than those working in governmental work locations. This is because there is an unconfirmed opinion in Gaza that as government employees have permanent contracts but lower salaries, they have little incentive to provide high standards of patient care. However, NGOs, who have western funding, are able to motivate their staff by providing better salaries and conditions of service. As NGO employers also offer only temporary contracts, this can lead employees to maintain high standards of care in order to keep their job. Comparing all work settings with scores for both the biomedical and biopsychosocial categories, using a One-Way ANOVA, did not show any differences. These results suggest that there was no effect of the place of work on attitudes and beliefs of physiotherapists about the management of LBP.

5.7.1.6.4 Predominant physiotherapy modalities used for low back pain

Data showed therapeutic exercise to be the most common treatment used by physiotherapists in the Gaza Strip for patients with LBP. Statistical analysis, using a Kruskal-Wallis Test, showed no significant difference between the predominant physiotherapy modality used by a physiotherapist and his/her scores on either the biomedical or biopsychosocial category.

5.7.2 Results from the ODAP

Participants were asked to score 39 photographs depicting several activities of daily living, common in the Gaza Strip. The scoring system required the physiotherapists to rate each of the activities recorded in the photographs on a seven-point scale ranging from ‘not harmful at all’ to ‘extremely harmful’.
Data analysis showed high mean scores for Items 6, 8, 13, 20, 24, 29, 32, 37 and 38 suggesting that physiotherapists saw these activities, involving bending forward, as very harmful. Appendix 19 shows descriptive statistics of all items in the questionnaire. There were 23 items (photograph numbers 5, 6, 7, 9, 11, 12, 15, 16, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39) with mean scores of more than 3.5 indicating that these items were seen as harmful. These photographs described physical activities with back flexion. There were five items (photograph numbers 1, 3, 4, 10 and 18) with mean scores of less than 3.5 indicating that participants saw these items as harmful to a small extent. These photographs presented light physical activities during standing or sitting. Results for Items 1 and 10 (respectively standing and sitting in an upright position) showed low mean scores and small standard deviations suggesting that participants felt that these positions were not harmful.

Looking at the items with low mean scores (less harmful) and those with higher mean scores (more harmful), it can be seen that participants considered flexion of the spine to be more harmful than extension, for patients with LBP. This suggests that physiotherapists in the Gaza Strip recommend patients with LBP to restrict back movements. Inferential statistical analysis using Kruskal-Wallis tests did not show any significant differences on any item scores and any of the socio-demographic variables of participants.

In conclusion, results from the ODAP suggest that physiotherapists in Gaza believe that physical activities which include movements of the back may affect the process
of management of LBP. They indicated that physiotherapists in Gaza recommend their patients restriction of back movements and inhibition of carrying weights. Recommendations were given to not bending the back forward, sitting for longtime (car drivers), climbing stairs carrying objects and pushing. This reflects the belief that LBP is a medical problem caused by physical injury. These results support results obtained by the PABS-PT that Palestinian physiotherapists follow a biomedical model in their treatment of LBP and toad further evidence of the validity of results of the study.

5.8 Discussion

This study is a part of the survey reported in this thesis aiming for providing descriptions of the physiotherapeutic process utilised in the management of LBP in the Gaza Strip. Investigating attitudes, beliefs and recommendations of physiotherapists in this process has been considered essential for improving physiotherapy practice (Ostelo et al., 2003; Houben et al., 2005). Results of the study reported in this chapter identified what the study participants believed about LBP and the approaches and methods they used in its management. Exploring which approach physiotherapists in Gaza used in the management of LBP was not the core of this study but investigating items related to it has contributed to identifying the factors that might influence the participants' clinical behaviour.

These results suggest that there is a reasonable consensus, among these physiotherapists, that back pain is not a dangerous condition. There also seems to be a consensus that reduction of daily physical exertion is a significant factor in treating LBP and that pain reduction is a precondition for the restoration of normal functioning. Physiotherapists seem to believe that patients with LBP are not safe to be physically active and that sporting activities should not be recommended for them. Furthermore, physiotherapists considered normal daily activities and return to normal levels of work capacity as harmful for patients with LBP. Perhaps as a consequence of these beliefs, physiotherapists used rest and restriction of back movements to manage patients with LBP. This belief may reflect educational bias towards the biomedical model of treatment. Ostelo et al. (2003) found that physiotherapists who have
received biopsychosocial treatment orientation scored higher on the statements which referred to biopsychosocial beliefs. In addition, anecdotal evidence indicates that the biopsychosocial approach has not been introduced into physiotherapy education in Gaza yet.

The PABS-PT questionnaire produced 22 items which showed a strong trend towards either agreeing with biomedical statements or disagreeing with biopsychosocial statements asked. The results suggest that physiotherapists focused their treatment on pain relief rather than dealing with functional limitations. This reflects the belief that back pain is caused by pathological changes and functional limitations are caused by pain. There was also strong belief that back pain sufferers should refrain from all physical activity in order to avoid injury and that knowledge about tissue damage is not necessary for effective therapy. This evidence emphasises the belief that LBP is due to injury but whatever the injury is, therapy can relieve it. Results also showed mean scores ranged between 2.5 and 4.5 on 43 items of the PABS-PT (66% of the total items) indicating that for these items neither strong agreement nor strong disagreement existed. In addition, results from the three case studies showed that physiotherapists held the opinion that usual activities and full time work with full duties are harmful. This evidence may further suggest that participants tend to believe that LBP is a pathological condition.

The occupational and domestic activities photograph (ODAP) questionnaire produced similar results to the PABS-PT questionnaire. This similarity showed the level of knowledge of physiotherapists about management of LBP. It also supported the hypothesis of Ostelo et al., (2003) and Houben et al., (2005) that PABS-PT could be predictive of physiotherapists' perceptions of the harmfulness of daily activities and treatment recommendations regarding return to normal activity. The findings suggest that physiotherapists in the Gaza Strip share common educational/philosophical approaches. This evidence may reflect a strong emphasis on biomedical treatment during initial physiotherapy education. It may also highlight cultural influences on pain beliefs because Arabs often believe that pain is of pathological origin and can be relieved by medicine (Ahmed, 2004).
On the other hand, Palestinian physiotherapists agreed that the way patients view their pain influences the progress of the symptoms and that learning to cope with stress promotes recovery from LBP. They seemed to hold the opinion that therapy can completely alleviate the functional symptoms caused by LBP. Physiotherapists agreed with the fact that patients with LBP are not disabled and that they can fulfil work and family responsibilities despite pain. In other words, it seems that physiotherapists appreciate the influence of the psychosocial dimension in the management of LBP in the Gaza Strip. These findings may indicate that during their assessment and treatment of patients, the physiotherapists realised that there was a relationship between the patients' symptoms and their psychosocial condition. Indeed, as stated earlier, on the continuum between biomedical and biopsychosocial approaches, it would not be expected that physiotherapists would be found at one extreme or the other. A mixture of approaches would appear to be the norm with a bias in one direction or the other. The overall comparison between items of biomedical attitudes and those demonstrating biopsychosocial attitudes indicated that physiotherapists in the Gaza Strip mainly followed the biomedical model in their treatment of LBP.

In earlier work, Ostelo et al., (2003) identified attitudes and beliefs of physiotherapists by their scores on the biomedical and biopsychosocial items. Comparing the results from this study and those reported by Ostelo et al., (2003), there are many differences in the items making up both therapeutic approaches. Ostelo’s et al., (2003) study showed high scores on the biopsychosocial items while higher scores in this study were given to the biomedical items. This evidence suggests that beliefs and attitudes of physiotherapists in Gaza about LBP differ from those reported in the West. These results may be indicative of cultural and educational differences in beliefs of physiotherapists about LBP.

Results from both Gaza and the study undertaken by Ostelo et al. (2003) showed some mean scores that could be considered to lie in the middle range indicating that physiotherapists' attitudes and beliefs about the biomedical and biopsychosocial approaches are complementary rather than contradictory. This indicates that physiotherapists in Gaza can realise the influence of the physical, psychological and social influences on the progress of LBP symptoms but with different levels of belief from their western colleagues. Furthermore, both studies showed no relation between
socio-demographic characteristics of participants and their scores on the questionnaire. This evidence emphasises the influence of education and culture in beliefs about LBP rather than the personal characteristics of physiotherapists.

However, this study and Ostelo’s work (Ostelo et al. 2003) were conducted in different cultures. Dutch and Palestinian physiotherapists both seem to acknowledge the pivotal role of patients’ ideas regarding the development and management of LBP, whilst differing in actual patient involvement in the rehabilitation process. The differences between the two studies emphasise the influence of culture and educational factors of physiotherapists in the management of LBP. Comparing the findings of this study with findings from Ostelo et al. (2003) supports findings from Linton (2002) and Pincus et al. (2007) that education and culture play an important role in beliefs and attitudes of physiotherapists about LBP.

5.8.1 The influence of knowledge and experience on physiotherapists’ attitudes and beliefs

Physiotherapists in Gaza gain their knowledge on LBP and its management from educational courses and clinical training during and after graduation. Older physiotherapists gained their education abroad and graduated before the establishment of physiotherapy education in Palestine in 1989. Those who trained in Egypt and Jordan studied in a similar cultural context, but those who studied in Europe learnt to practice in places with different cultures and health policies to Gaza. Younger physiotherapists mostly received their physiotherapy education in Palestine, where learning and teaching was based on physiotherapy practice in western Europe, to some extent made culturally relevant to Palestine. They were taught by expatriate physiotherapists, as well as Palestinians. The curricula used by many of the programmes were written by expatriates and influenced by similar programmes in the western world (Dawson 1997). Few of these curricula have been reviewed based on local research evidence.

Furthermore, very few physiotherapy postgraduate courses and little advanced clinical training have been available in Palestine until the present. According to the
researcher's knowledge, very few of the participants in this study have received any further training since graduation, and perhaps the only regular source of information is available on the internet. Despite this, they showed a good awareness of the biopsychosocial approach even if they did not apply it to their work.

Differences in physiotherapy education seem to be important factors in the development and formation of attitudes and beliefs about managing LBP. Ferreira et al., (2004) compared the attitudes and beliefs of Brazilian and Australia physiotherapy students with published data from North American health care providers, on whether knowledge of history of chronic LBP patients affected students' attitudes and beliefs towards them. The study used the HC-PAIRS (Rainville et al., 1995). Results showed that Brazilian physiotherapy students agreed more strongly with the notion that LBP justifies disability and activity limitation than Australian physiotherapy students and North American health care providers. The study also found that a personal history of chronic LBP does not affect students’ attitudes and beliefs.

Ostelo et al., (2003) found that physiotherapists who received educational courses on biopsychosocial therapies gave higher scores on the biopsychosocial beliefs and attitudes in his questionnaire. Anecdotally, the use of the biopsychosocial model is relatively recent in Europe, not universally adopted and not taught in all undergraduate physiotherapy courses, so there is need for post-graduate training and some evidence of the changes brought about by this training. This belief has been supported by Latimer et al., (2003) who showed that following a teaching module about chronic LBP, students' beliefs changed to become more like those of pain clinic health care providers.

In the study reported in this thesis, participants received different programmes of education with different teaching modules of LBP and their knowledge was influenced by both where they studied and their own culture and religious practice. They treated patients with similar cultural backgrounds and religious beliefs. Results reported here showed that physiotherapists in Gaza followed the biomedical model of back pain management which matches the view that Arab patients are more likely to believe that health problems, such as back pain, require medical treatment (Ahmed, 2004). Islamic beliefs suggest that "for every illness there is a medicine; if the right
medicine is given there will be a cure" (Khan, 1990). In such situation, it would be safe to suggest that pain experience must be addressed comprehensively in physiotherapy education and physiotherapists in Gaza, need to develop skills that enable patients with LBP to employ self-management strategies. In light of this, it can be seen that this study supports previous research that education plays an important role in the development of attitudes and beliefs of physiotherapists about LBP.

The current study agreed with Ostelo et al., (2003) that years of experience in the management of LBP did not affect the attitudes and beliefs of physiotherapists. Also Ferreira et al., (2004) and Houben et al., (2005) suggest that previous personal LBP experience does not significantly affect physiotherapists’ attitudes and beliefs. In Gaza, it would be expected that physiotherapists, who have been graduated many years without exposure to current learning and teaching concepts and modern health policies, might continue to practice according to those attitudes learnt in their undergraduate physiotherapy education. In western studies, physiotherapists seem to follow protocols of management, based on evidence, rather than personal preference. However, the influence of experience on physiotherapist’s attitudes about LBP still needs to be explored in more detail.

5.8.2 The influence of culture and religion on physiotherapists’ attitudes and beliefs

It has been recognised that psychosocial factors have a predominant influence on the outcome of LBP (Linton, 2000). Hence, the quality of communication between patient and physiotherapist is considered to be the basis of a good outcome (Gyllensten et al., 1999). Culture is said to influence how patients express pain and emotion, their pain behaviour and how they communicate with their physiotherapists. Social and cultural attitudes mediate both physiotherapist and patient perceptions of pain intensity and treatment. In Gaza, religious and social barriers, such as treating patients of the opposite gender and removing clothes to look at posture and palpate affected structures, may influence the process of assessment and treatment of patients with back pain. Culturally, physiotherapists in Gaza, as other Arab health care providers, may show superiority in the physiotherapist-patient relationship which could affect
patients' participation in the therapeutic alliance resulting in poor assessment and limitation of patient self-management strategies.

The overall results of this study identified that patients with LBP were treated using a predominant biomedical approach. Although this was expected, as it is the therapeutic approach Palestinian physiotherapists have learned, the participants disagreed with some aspects of the biomedical model, particularly with regard to the notion that LBP justifies disability. This may suggest that attitudes and beliefs of physiotherapists were influenced by the majority religious heritage in Gaza, in which Muslims do not give up hope because they believe that God has the power to cure health problems. It also highlighted that participants fulfilled cultural obligations as disability may stigmatise people in Palestine (Simister and Younis, 1999). It can be said that the influence of religion and culture on life events, such as pain, depends on levels of religious observance and stability of cultural values. Historically, Palestinians have been exposed to different cultures of the world for generations because of the geographical position of their country and its political and religious importance. Additionally, over the last 50 years there has been an influx of expatriate aide workers due to the deteriorating economic situation. Recently, possibly due to this deteriorating political and economic situation, people in Gaza are more observant of their religious obligation than in previous decades and religious people have gained increased political and economic influences. These issues make it difficult to measure the influence of religion and culture on beliefs of people on issues such as back pain.

Findings from research conducted in western cultures have shown that reassurance and information about good prognosis can maintain optimism (Hagen et al., 2003) which may contribute to effective reduction of back-related disability (Buchbinder et al., 2001). This indicates that providing patients with information about LBP can contribute to better prognosis. In this study, despite physiotherapists scoring higher overall on the biomedical items, they showed positive attitudes towards prognosis of LBP and the efficacy of physiotherapy in its management. The term "Inshallah" (God willing) is frequently used in the communication between patients and health care providers in the Gaza Strip. This culturally reflects optimistic attitudes about disease, prognosis and treatment. These findings emphasise the influence of culture in the management of LBP highlighted by previous studies (Waddell, 2004) and suggest that
Arabic cultures may develop a modified biopsychosocial model to inform better management of LBP. Physiotherapists in Gaza may explore cultural concepts that promote optimistic attitudes in their communication with their patients.

5.8.3 The influence of professional factors on physiotherapists' attitudes and beliefs

While seeking treatment for their LBP, patients come into contact with different health care providers, including physiotherapists. In Gaza, patients do not have open access to a physiotherapist, but need a referral from a general practitioner or other physician. The study reported in this chapter investigated attitudes and beliefs of physiotherapists without reference to other professional health care dealing with LBP. Later in this thesis, the professional relationships in the management of LBP will be investigated.

5.9 Conclusion

The results of the PABS-PT and ODAP questionnaires suggest that Palestinian physiotherapists in the Gaza Strip believe LBP to be a pathological problem in which physiotherapy plays a significant role. Anecdotal evidence suggests that these beliefs reflect the current level and scope of physiotherapy practice in the Gaza Strip. Physiotherapists use a biomedical approach in the management of LBP, but although physiotherapists focused on pain, they did not agree with the notion that pain justifies disability. Physiotherapists’ education, religion and cultural beliefs and the health care context in which they work appear to have an important impact on physiotherapists’ attitudes and beliefs about the management of LBP. In the next chapter the physiotherapists' views about the current physiotherapy provided for patients with LBP and its implications will be explored in more detail.
Chapter Six

Physiotherapists' Views about Management of Low Back Pain in the Gaza Strip

6.1 Introduction

The management of LBP is considered essential to reduce pain, restore function and decrease the burden of the disorder on the patient as well as on society. There is evidence throughout history that people have had back pain, and its prevalence is thought not to have changed, but the numbers of people seeking health care are considered to have increased over time (CSAG, 1994). The prevalence of people with chronic LBP consulting medical practitioners has increased so dramatically in recent years that it has been referred to as a 'twentieth-century health care disaster' (Waddell, 2004). A broad range of therapies have been advocated for the treatment of LBP, including physiotherapy.

According to Callaghan (1994) and Waddell and Burton (2005), patients with LBP can account for 60% of referrals to an out-patient physiotherapy department in the UK. There appears to be a lack of consensus about the most effective treatment, and research to date has not been rigorous enough to give clear indications of the value of any particular approach (Evans and Richards, 1996; van Tulder and Koes, 2004a, 2004b). These researchers reviewed the effectiveness of different approaches and methods used in the management of LBP from randomised trials. They argue that patients with LBP do not have any irremediable impairment and long-term incapacity is not inevitable; given the right treatment, it should be possible to relieve pain and most patients should be able to return to work.

Empirical studies indicate that the selection of physiotherapy approach and modalities in treatment of LBP is based on a combination of clinical assessment, evidence, patient preference, physiotherapist's experience and professional judgement (Jones et al., 2000; Jones et al., 2002), with no consensus on which is most important. Many
treatments are available within physiotherapy and quantitative evidence is gradually increasing to support the use of various modalities and treatment strategies in the management of LBP (CSP, 2006; Goldby et al., 2006; NICE, 2009). These studies come from western cultures and highlight differences in physiotherapists' attitudes, beliefs and views about the low back disorder and its management. In the study reported in Chapter 5 of this thesis, the researcher investigated the attitudes, beliefs and recommendations of Palestinian physiotherapists in Gaza for LBP by using two questionnaires designed for this purpose. Although the study provided detailed descriptions of what approaches and methods of physiotherapy utilised in the management of LBP in Gaza, it would also useful to identify why these approaches and methods were selected. The objectives addressed in the study presented in this chapter were:

- To determine current physiotherapy provision for patients with non-specific low back pain in the Gaza Strip.
- To explore issues that might influence the provision of physiotherapy for non-specific low back pain and its outcomes in the Gaza Strip.

It is suggested that this new knowledge provides rich insights into patient-physiotherapist relationships and socio-cultural and professional implications for effective physiotherapy for patients with LBP in the Gaza Strip. Findings of the current study would also provide an explanation of the subjective experiences which can impact across many facets of physiotherapy practice.

6.2 Physiotherapy management of low back pain

A number of authors consider that approximately 90% of patients recover spontaneously from their first episode of acute LBP (Mathew et al., 1988; Krismer and van Tulder 2007), but there are those who experience recurrence and become increasingly physically and functionally disabled. These conclusions come from western countries suggesting that the 10% who do not recover present greater demands for health services, costs to society and personal distress and disability. Krismer and Van Tulder (2007) suggest that general treatment aims should be to
reduce pain and improve activity/participation, including prevention of disability and maintenance of work capacity.

There is evidence that psychological factors play an important role in the production and maintenance of LBP disability (Waddell, 1996; Linton, 2000; Burton, 2005). Moreover, it has been suggested that fear of pain and pain-avoidance may also be important factors in the aetiology of disability in musculoskeletal disorders (Linton, 2000; Waddell, 2004). It can be argued that if a patient’s disability is influenced by psychosocial factors, physiotherapy management, based solely on patho-physiological hypotheses is unlikely to be successful. It would therefore seem likely that greater success would be achieved if treatment approaches included interventions which focused attention on the psychosocial factors involved in a patient’s presentation of LBP.

The types of physiotherapy used in the treatment of back pain are wide-ranging. Foster et al. (1999) and Gracey et al. (2002) conducted two surveys on current practice of physiotherapy management in Britain and Ireland. They found that the most popular methods of treatment for LBP were McKenzie approach and Maitland mobilisation. Exercises were commonly used but the participants varied greatly in the specific types of exercise that they advocated. Electrotherapy was also popular, with interferential therapy being most frequently used, followed by ultrasound. Manipulation, fitness programmes and multidisciplinary approaches were rarely used.

Only Gracey et al. (2002) of these surveys enquired specifically about education, which was seen to be part of the physiotherapy programme by 89% physiotherapists. Two earlier surveys carried out in the UK and in the Netherlands by Ter Haar et al., (1988) and Van der Valk et al., (1995) illustrated that ultrasound was, in general, the physiotherapist’s most popular modality. This was the case for the United States (Battie et al., 1994). Jette et al., (1994) reported that, in the United States, exercise and electrotherapy were the most commonly used modalities in treatment of LBP. Most likely, these results reflect not only national differences but also the changing global trends in treatment over time.

Management strategies currently used with patients with LBP in Gaza are investigated in this part of the thesis in order that an understanding of the Gazan situation may be
reached. This information may provide insights into the future direction of physiotherapy education in the field of LBP in Gaza, and whether postgraduate education needs to be further developed or modified. The information will also form a sound basis for future decision making when there is more good quality research about LBP and its most effective treatment. The following sections consider important elements of the physiotherapy management of LBP.

### 6.2.1 The value of physiotherapy modalities

It can be noted from a number of surveys carried out in the UK, US and the Netherlands, that electrotherapy is frequently used by physiotherapists (Moffett and Manion 2005; Krismer and van Tulder 2006). In their discussion of the value of physical therapies for back pain, Moffett and Manion (2005) argued that physiotherapists who do not have specialist manual therapy skills might offer these approaches for pain relief, as well as treatments such as lumber traction. They also suggested that treatments that rely on machines have advantages in that they enable the physiotherapist to see another patient at the same time. In addition, some machines, for example, interferential therapy or pulsed short-wave diathermy, have many different dials and flashing lights that can be quite impressive to the patient, thus maximising the placebo effect, especially if the therapist as well as the patient appear to have faith in the treatment modality. From the researcher's informal observation, this appeared to be the case in Gaza and investigating these issues within focus groups of physiotherapists would provide this research project with an explanation of the factors influencing the delivery and outcome of physiotherapy in Gaza.

The effect of various physiotherapy modalities used in management of LBP has been reviewed by some authors. Van Tulder and Koes (2004a, 2004b) reviewed the clinical evidence for medical and non-drug treatments utilised in the management of acute and chronic LBP. The authors searched Medline, Embase and Psychlit, using the search strategy recommended by the Cochrane Back Review Group (van Tulder et al., 1997). These reviews suggest that exercise may be an important intervention for the prevention of LBP. There is strong evidence that advice to stay active is an effective
treatment and moderate evidence for the effectiveness of spinal manipulation for acute LBP. There is also strong evidence that exercise therapy, behavioural therapy and multidisciplinary pain treatment programmes are effective for chronic LBP. Table 6.1 summarises the evidence assembled by van Tulder and Koes (2004a, 2004b)

Table 6.1: Evidence of effectiveness of physiotherapy modalities for acute and chronic LBP (van Tulder and Koes, 2004a, 2004b)

<table>
<thead>
<tr>
<th></th>
<th>Acute low back pain</th>
<th>Chronic low back pain</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beneficial</strong></td>
<td>Advice to stay active</td>
<td>Multidisciplinary treatment programs</td>
</tr>
<tr>
<td><strong>Likely to be</strong></td>
<td>Multidisciplinary treatment programs</td>
<td>Back schools Behavoural therapy Exercise Physical conditioning (cognitive behavioural approach plus physical training)</td>
</tr>
<tr>
<td><strong>beneficial</strong></td>
<td>Behavioural therapy</td>
<td></td>
</tr>
<tr>
<td><strong>Unknown</strong></td>
<td>Electromyographic biofeedback</td>
<td>Electromyographic biofeedback Lumbar supports Massage TENS</td>
</tr>
<tr>
<td><strong>effectiveness</strong></td>
<td>Lumbar supports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Massage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TENS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Traction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thermal therapy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ultrasound</td>
<td></td>
</tr>
<tr>
<td><strong>Unlikely to be</strong></td>
<td>Exercises targeting</td>
<td></td>
</tr>
<tr>
<td><strong>beneficial</strong></td>
<td>individual muscles</td>
<td></td>
</tr>
<tr>
<td><strong>Likely to be</strong></td>
<td>Bed rest</td>
<td>Traction</td>
</tr>
<tr>
<td><strong>ineffective or</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>harmful</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Despite positive research findings of exercise in terms of reduction of functional limitations (van Tulder and Koes, 2004a, 2004b), systematic reviews of the literature have failed to find evidence to support the use of any specific programme of exercises
(Faas et al., 1995; Van Tulder et al., 2000). To this end a specific exercise would indeed best suit a specific problem. A variety of exercise approaches are used by physiotherapists for LBP. It can be argued that it is essential to fit the particular exercise to the directional preference of the individual, if a directional preference is indeed evident.

Patient education has been highlighted in the literature as a prominent part of the management of LBP for the past two decades (Frost et al., 2004). This importance is based on the belief that recovery from back pain can be enhanced if those who experience it better understand the nature of their problem (Cohen, et al., 1994; Frost et al., 2004; Liddle et al., 2007). The tendency towards physical inactivity and the belief that LBP is a serious problem that can interfere with recovery has been addressed by the clinical guidelines panels (Bigos, et al., 1996). Such guidelines are evidence based and evidence linked, relying on systematic searches of the scientific literature up to the end of 2003 (Burton, 2005). Patient education literature is often given to patients as part of the management of LBP, but the educational content of this literature and its effectiveness has not been extensively studied. Despite this, different guidelines support education programmes as having a positive impact on maintaining and restoring activity and participation to reduce the impact of LBP (Krismer and van Tulder, 2007).

Despite the fact that there is overwhelming agreement within the physiotherapy profession that patient education plays an important role in dealing with LBP, there is no consistency about the content of patient education. The debate on LBP education reflects different philosophies of health. Professional-controlled approaches are based on the medical model and patient-centred approaches are based on a social model of health (Waddell and Burton, 2005). Waddell and Burton (2005) have recommended that patient education for LBP should be patient-centred, based on experience-based learning that advocates an open therapist-patient relationship. Such a relationship is considered to encourage dialogue, action and reflection on progress and steer clear of unrealistic expectations and misunderstandings. This is based on the argument that effective physiotherapy practice depends on the ability to help patients to learn what they and health professionals might be able to do in order to address perceived
problems. Patient education strategies currently used in the Gaza Strip for patients with LBP are explored and discussed in this chapter.

Advice is said to constitute all the information that the patient receives verbally, in written, audiovisual or electronic format during the course of treatment (Frost et al., 2004). These authors have argued that advice is an important and effective medium in the management of LBP. Other researchers have highlighted the importance of advice in the management of LBP and findings from randomised controlled trials in western societies (Burton et al., 1999; Liddle et al., 2007) recommend advice for patients with LBP. Despite the fact that the wide variety of outcome measures used in these studies makes valid comparisons between treatment outcomes difficult, patient advice is generally accepted as part of management of patients with LBP. However, there is a debate about the effectiveness of advice given to people from ethnic minority groups in western society and cultures in other parts of the world (Liddle et al., 2007). This paves the way for investigating the use of advice for LBP in different cultures because generalisation of results from different cultures seems irrelevant. The researcher investigated the use of advice in physiotherapy management of patients with LBP in the Gaza Strip, focussing on the relevance, content and frequency of advice in an Arab, Islamic society.

6.2.2. The physiotherapist-patient relationship

A potentially important but relatively unexplored influence on patients' pain experiences is the attitudes and beliefs of the physiotherapists with whom they come into contact. Physiotherapists are frequently asked to provide advice and recommendations about physical activities, work and rest and their attitudes and beliefs may be an integral part of the healthcare process, influencing the success or failure of treatment. Physiotherapists hold a range of attitudes and beliefs about LBP (Daykin and Richardson, 2004) and these attitudes appear to be associated with the work and activity recommendations that physiotherapists give to LBP patients (Bishop et al., 2008).
In the study reported in Chapter Five of this thesis, the researcher investigated the attitudes, beliefs and recommendations of Palestinian physiotherapists about LBP and its management. Results of the study showed that physiotherapists recommend limitations of work and activity levels. Studies from the UK have provided similar results despite identifying when patients with LBP are at risk of chronicity (Bishop and Foster, 2005) and an important proportion of physiotherapists continue treating patients with LBP even when they fail to improve (Pincus et al. 2006). The current study sought to explore the issues that might influence the Palestinian physiotherapists' clinical behaviour and its associations and implications for both clinical practice and research.

6.3 Method

As demonstrated in Chapter Three, section 3.5.2.1, the researcher considered that an ethnographic qualitative research approach was well suited to this part of the study, due to their emphasis on the human experience of health (LoBiondo-Wood and Haber, 2002) within a particular cultural context. Ethnographic data collection can involve combination of participant observation and interviewing and interpretation by the researcher of cultural patterns (Crabtree et al., 1993). In this study participant observation was not carried out because this would not have provided any further information about the physiotherapists' clinical practice than that obtained by an interview. The researcher carried out interviews using focus groups to explore the physiotherapists' views. This method is useful for exploring poorly understood areas (LoBiondo-Wood and Haber, 2002), such as treatment of LBP.

6.3.1 Participants

One group of 7 female and one group of 8 male physiotherapists participated in the study, details of which are presented in Table 6.2. Participants were selected from the five districts of the Gaza Strip, using purposive sampling. Purposive sampling aims to sample a group of people with particular characteristics and is therefore deliberately non-random (Bowling, 1997). Prior to conducting the study, the researcher visited the major physiotherapy clinics and departments in the five districts of the Gaza Strip to
discuss the study with the directors of these clinical facilities. Each director was asked to find out which of the staff were in principal willing to participate and then nominate two physiotherapists in his/her department with at least 3 years experience in treatment of LBP according to the inclusion criteria of the study. The researcher selected 8 male and 7 female physiotherapists from those nominated, all of whom had agreed voluntarily to participate, taking into account the geographical spread, type of facility and experience of participants. The researcher also selected an additional 2 male and 2 female physiotherapists in case of non-attendance of any participant. The directors were unaware which members of staff participated in the study. Table 6.2 shows the demographic characteristics of the participants.

Participants were recruited from government, UNRWA and non-governmental physiotherapy clinics through direct request from the researcher. The researcher contacted the selected physiotherapists and invited them to take part in the study. The selected physiotherapists read an information sheet (Appendix 7, Arabic) and signed informed consent statements prior to participation in the study (Appendix 9, Arabic). In order to encourage attendance at the focus group, each participant was telephoned following recruitment.

Because of the difference in the social roles of men and women in Palestinian society, and resultant same-gender group socializing in Gaza, participants were placed in same gender focus groups. It was hoped that this would provide a group of homogeneous participants and as a consequence would promote a dynamic sharing of information (Krueger 1998). As there is general agreement in the literature that seven to eight is a suitable number, this size was used. Neuman (2003) argues that fewer participants may mean that one or two members become dominant, while Krueger and Casey (2000) suggest that a greater number of participants may be hard to manage, may inhibit some group members or lead to fragmentation of the group. It was felt that the sample was broad enough to encompass some variety and variability (Jongbloed, 2000), illustrated by the demographics of the participants. These variations allowed gathering the information needed to achieve the objectives of this part of the study. The duration of the focus groups was governed by when ‘saturation’ occurred. Depoy and Gitlin (1994) suggest that saturation of information has been achieved when
topics are repeated. The researcher considered that saturation was reached when there was repetition of information.

Table 6.2: Description of demographic characteristics of participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Age</th>
<th>Years of experience</th>
<th>District and work place</th>
<th>Participant</th>
<th>Age</th>
<th>Years of experience</th>
<th>District and work place</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>35</td>
<td>10</td>
<td>Gaza / Government</td>
<td>1</td>
<td>37</td>
<td>12</td>
<td>North / Government</td>
</tr>
<tr>
<td>2</td>
<td>34</td>
<td>11</td>
<td>Gaza / UNRWA</td>
<td>2</td>
<td>39</td>
<td>13</td>
<td>Gaza / Government</td>
</tr>
<tr>
<td>3</td>
<td>34</td>
<td>8</td>
<td>Mid-Zone / Non-government</td>
<td>3</td>
<td>28</td>
<td>5</td>
<td>Rafah / UNRWA</td>
</tr>
<tr>
<td>4</td>
<td>29</td>
<td>7</td>
<td>North</td>
<td>4</td>
<td>38</td>
<td>13</td>
<td>North / Government</td>
</tr>
<tr>
<td>5</td>
<td>30</td>
<td>5</td>
<td>Khan Younis / Government</td>
<td>5</td>
<td>34</td>
<td>11</td>
<td>Khan Younis / Government</td>
</tr>
<tr>
<td>6</td>
<td>30</td>
<td>5</td>
<td>North / Government</td>
<td>6</td>
<td>34</td>
<td>7</td>
<td>North / Government</td>
</tr>
<tr>
<td>7</td>
<td>36</td>
<td>13</td>
<td>Rafah / UNRWA</td>
<td>7</td>
<td>52</td>
<td>27</td>
<td>Gaza / UNRWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td>49</td>
<td>22</td>
<td>Mid-Zone / Non-government</td>
</tr>
</tbody>
</table>

6.3.2 Inclusion criteria

To be eligible for inclusion in the study, participants had to meet the following criteria:

- A degree-qualified physiotherapist
- At least three years experience in treatment of patients with low back pain

Participants were informed of their right to withdraw from the study at any time and for any reason without having to provide explanation.
6.4 Ethics and confidentiality

This study was approved by the School of Health Professions School Ethics Panel at the University of Brighton (Appendices 2 and 3) and the Physical Therapy and Rehabilitation Directorate of the Palestinian Ministry of Health in the Gaza Strip (Appendix 1). To ensure participant confidentiality, participants were identified in transcripts by codes with personal details known only to the researcher. Data files containing personal information were saved in separate files from focus group transcripts and secured by a password. Hard copies of data were stored in locked cabinets accessible only to the researcher.

6.5 Focus group topics questions

This study aimed to investigate the opinion of physiotherapists about the current physiotherapy and its outcomes in Gaza. Topics and questions for this purpose were derived from the implications of physiotherapy practice for management of LBP. Questions were developed from the topics, according to procedures outlined by Krueger and Casey (2000) to elicit answers encompassing physiotherapy practice and factors influencing its outcome. This included questions about characteristics of patients and progress of symptoms, delivery of physiotherapy and professional relationships, factors which may influence delivery and outcome of physiotherapy and suggestions for improving the outcome of physiotherapy in patients with LBP in the Gaza Strip. The key questions were developed by Expert Panel of physiotherapy teachers who participated in 2 focus groups prior to conduction of this study. It was anticipated that by including questions in all of these areas, the objectives of this part of the study would be achieved. Questions were open-ended that could be answered in a variety of ways. The first two questions were very general and then the discussion moved to get more specific questions. The following are the questions used in this study and the schedule of the physiotherapist focus group discussion is presented in Appendix 20.

1. Let us make a start by asking everyone to introduce him/herself, how many years of experience have you had in the treatment of LBP and what methods you use in the treatment of LBP?
2. In your opinion, is treatment of patients with LBP motivating and enjoyable? .......... Why? Why not?

3. Do you believe that the patient with LBP should have a role in his/her treatment? Why? What role can the patient play and how can be approached to do so?

4. What do patients expect from physiotherapy and from you as a physiotherapist?


6. How do you think we can improve the effectiveness of physiotherapy for patients with low back pain?

6.6 Pilot study

Pilot focus groups were used to provide the researcher and facilitator with an opportunity to improve their skills, in order to attempt to reduce the potential for bias and enhance data quality. One male and one female pilot focus group (four participants in each group) were conducted to assess the effectiveness of the questions; to see if it was possible to identify response biases (Carpenter, 1994) and to gain information from the participants regarding their interpretation and reaction to the interview questions (Drever, 1997). Participants were recruited from eight different physiotherapy clinics in the Gaza Strip. The selection of participants was based on the inclusion criteria (see Section 6.3.2). Difficulties experienced by members in each group were noted and the group and facilitator were asked for feedback following each discussion. The pilot study took place at the conference room at Al-Azhar University in Gaza City and involved participants not included in the main study. It was tape-recorded, conducted by the researcher and facilitated by a same gender individual in each group. The researcher and the facilitator were both present in the room with the participants. The questions were asked by the researcher while the facilitator helped in organization of the discussion and facilitated interactions between participants. Each focus group lasted for two hours.
It was noted that questions concerned with physiotherapeutic approaches, culture and the role of the patient in his/her management tended to elicit answers focussing on medical issues. The researcher had to re-word and explain some questions about the biopsychosocial approach (some participants were unfamiliar with this term) in order to encourage participants to discuss all aspects of their experience. These points were taken into account and amendments were made to focus the attention of participants on all possible factors influencing the outcomes of physiotherapy of LBP.

It was suggested by both groups that a copy of the interview schedule be provided to participants prior to the interview to give them something to refer to in order to help understanding of the questions and give structure to the interview. Gillham (2000) considers that this preparation takes some of the burden off the interviewer but suggests that questions should be available on the day of the interview to prevent participants from preparing too much in advance (Gillham, 2000). The researcher attached the interview schedule to the information sheet with the consent form to be signed early on the day of the interview. Amendments were made to the methodology taking these comments into account. The pilot study was transcribed and analysed to increase familiarity with the process.

6.7 Data collection

The focus groups were audio-tape recorded to ensure that the whole discussion was captured and that complete data were provided for analysis (Mathers et al, 2002). It was possible to recruit participants with a variety of experience, despite their geographic diversity, because of the researcher’s personal knowledge about participants. The researcher is aware that this relationship may also have had a negative influence on his attempts to maintain a neutral position in relation to conduct of the focus group. Unfortunately because of the lack of research-aware and properly trained staff in Gaza it was not possible for the researcher to distance himself from the focus groups. All participants were informed that their participation was voluntary and that personal relations should not be considered either in participation or in the discussion of the topic. The researcher introduced and concluded the discussion.
6.7.1 The organisation of the focus groups

In qualitative research, the key instrument is the researcher, whose knowledge, understanding and insights are brought to bear on the data collection and analysis (Carpenter, 1994). Sources of subjectivity of the researcher in relation to the focus group participants were his close involvement with physiotherapy education and clinical practice in Gaza over several years. Carpenter and Hammell (2000) consider that the role of the researcher should be monitored and discussed in order to reflect the interactive processes that occur during discussions. The presence of facilitators mediated the effect of the presence of the researcher and the conduct of focus group interviews was made clear at every step and reasons given for all actions taken. Only two, out of a possible 28 participants had been taught by the researcher and as he had not practiced as a physiotherapist in Gaza for 20 years, few of the participants were work colleagues. The broadest range of information and perspectives was sought, and therefore included physiotherapists who had treated patients with LBP for differing lengths of time.

Because of the constraints of scheduling meetings and availability of participants, there was a period of two weeks between the first and the second focus group. Participants in the first group were asked not to communicate the content of the discussion to any of their colleagues who were in the second group. This request was facilitated by the lack of social activities across the gender groups in Gaza. Both interviews took place in the conference room at Al-Azhar University in Gaza. The discussion guide was followed by the researcher but the discussions were allowed to flow spontaneously. The facilitator facilitated the organisation of the discussion and provided feedback to the interviews.

Each focus group discussion lasted approximately two hours, coming to a natural stop when the researcher felt the essential topics had been covered and that topic saturation had been achieved. Demographic characteristics of participants were obtained at the beginning of each focus group interview. These data were recorded individually by the researcher and were not included in the audio-tape. However, participants' suggested that they introduce themselves to each other at the beginning of the focus
group, in order to be able to address each other by name. This strategy also enabled
the person listening to the audio-tape to recognise who was speaking at all times
during the discussion.

Discussion was guided by pre-prepared open-ended questions designed to encourage
participants to present their own experience, whilst incorporating areas of interest to
the research topic (Appendix 20). The major topics the researcher wished to explore
were respondents' views about the management of LBP, their experiences of
approaching and treating patients with LBP, and their evaluation of the influence of
social life and culture on the delivery and outcomes of their treatment. In order to put
the respondents at their ease and introduce the topic of the discussion, the first two
questions were broad and open:

"Could everyone tell us how you treat patients with non-specific
low back pain and what methods of physiotherapy do you use?"
"Do you enjoy treating patients with non-specific low back
pain?"

Prompting and probing questions were also incorporated into the discussions,
depending on responses to prepared questions.

6.8 Data analysis

Focus group discussions were transcribed verbatim. The researcher transcribed the
tapes within three days of conducting each focus group. This helped the researcher to
become familiar with the data, ensured that he had a true record of the discussion and
safeguarded against distortions in transcription (Drever, 1997). Data were also
transcribed by an independent physiotherapist who was not involved in the focus
groups to ensure reliability of the data obtained. Following the approach used by
Patton (1990), the researcher asked one participant from each group to be a "key
informant with whom the researcher and facilitators could review the transcripts and
emerging categories to enhance the credibility of the study. Transcripts were
translated from Arabic to English language by an experienced physiotherapist who
lived 33 years in Gaza and moved to live in the UK 20 years ago. Following this, back translation of transcripts was carried out by the researcher.

According to Krueger and Casey (2000, p.141), focus group analysis is:

A deliberate, purposeful process...is systematic, uses verifiable procedures, is done in a sequential manner and is a continuing process.

Thematic analysis of the transcripts data was carried out to explore key themes. The thematic analysis was conducted using the sequential process of encoding data suggested by Boyatzis (1998), Gallagher and MacLachlan (2001) and Silverman (2005). Figure 6.1 demonstrates the analytic procedure used in this study.
A theme has been defined by Boyatzis (1998) as a pattern found in the information that at minimum describes and organises possible observations and at maximum interprets aspects of the phenomenon. In this study, a theme is a pattern found in the information that facilitates an interpretation and it was chosen as the analytic
framework because it enabled a description of the management of LBP from the participants own words.

Following the approach used by Gallagher and MacLachlan (2001), a cut and paste method was employed to view the focus group data as a whole. The data were frequently revisited in light of newly identified themes that emerged during data collection and analysis in order to combine similar findings. Conceptual saturation was reached when no new categories were generated (Kendall, 1998), and focus group text contributing to each theme was used to compile data for themes identified. This process entailed the identification of categories in the data. Table 6.3 shows a sample of identifying categories in the transcripts (please see Appendix 21 for details), the classification of these patterns which is then interpreted, named and described as a theme (see Table 6.4).

<table>
<thead>
<tr>
<th>Table 6.3: Identifying categories in the transcripts</th>
</tr>
</thead>
<tbody>
<tr>
<td>The diagnosis made by doctors do not help us. Doctors do not provide us with details of the patient's problem (M3)</td>
</tr>
<tr>
<td>I personally, although I have treated many patients with LBP, do not like to treat LBP (M7)</td>
</tr>
<tr>
<td>I am not a psychologist to treat patients with psychological problems (M6)</td>
</tr>
<tr>
<td>I always advice them to get some rest and practice good positioning and to protect their backs during their housework (F4)</td>
</tr>
</tbody>
</table>

6.8.1 Reliability and validity

Validity was verified by validity of the transcriptions and member checking. The researcher returned the transcript from the male focus group to two participants and the transcript from the female focus group to one participant to ensure they agreed that it was an accurate representation of what was said during the discussion. Emerging themes were confirmed by two independent persons to ensure accurate
interpretation. They were given a copy of the transcript and asked to generate what they considered to be emerging themes in order to ensure accurate interpretation as recommended by Burnard (1991).

Reliability was demonstrated by post-focus group feedback sessions in which the researcher and facilitators provided feedback about each focus group discussion, and by nominating a third party (a physiotherapist) to independently listen to and transcribe both focus groups. Additionally, the transcripts were translated from Arabic into English language by an experienced translator, who is also a physiotherapist, using a recognised back-translation method, to confirm the meanings and overtones of the transcript (Oppenheim, 1992).

6.9 Findings

Findings of the current study described the physiotherapy approaches and treatments provided for patients with LBP in the Gaza Strip. They highlighted the factors influencing this process and provided suggestions for improving it. Participants were generally dissatisfied with their clinical practice and the outcomes of their treatments but showed positive attitudes towards physiotherapy for patients with LBP:

*I like to treat low back pain patients, as you said, by hot packs and massage, which will have good results. Even with all the reasons you are talking about, still there will be some good results (M8).*

The physiotherapeutic process of patients with LBP appeared to be largely affected by the health care system by which physiotherapists - to some extent - lost their role in this process:

*I would like to tell you frankly, I don't feel that the patient is my patient. I don't admit or follow-up or discharge them. I feel I am like a tool; I couldn't change the plan of treatment. I don't see myself as a physiotherapist, I see myself as an assistant or aide. It is always the same, there is nothing specific you can input. Therefore, there is no confidence between you and the patient (M5).*
The interviews provided descriptions of the patient's behaviour throughout the physiotherapeutic process. The social dimension of low back disorder was apparent in the female focus group reflecting the social role of woman in the participants' society:

> When these female patients come saying they have back pain although the doctor says there is no problem, we will understand that they just need to keep coming and going to the clinic [i.e. get out of the house for a socially acceptable reason] (F6).

Five themes were generated from the two focus groups describing the views of Palestinian physiotherapists about current provision of physiotherapy and its implications for patients with LBP. Each theme was developed from a number of similar categories. A summary of the themes and categories emerged are presented in Table 6.4. Different opinions emerged in relation to these themes and data analysis revealed that the views cited from the focus groups can be seen as holistic experiences of a group of professionals. The italicised sentences are quotes from participants and F refers to female participants while M refers to male participants.
### Table 6.4: Summary of themes and categories

<table>
<thead>
<tr>
<th>Themes</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Participants' characteristics and clinical behaviour</td>
<td>• The diagnosis &quot;LBP&quot; and the referral to physiotherapy</td>
</tr>
<tr>
<td></td>
<td>• Physiotherapy assessment and plan of treatment</td>
</tr>
<tr>
<td></td>
<td>• Physiotherapy approaches and modalities used in management of LBP</td>
</tr>
<tr>
<td>2. Participants' satisfaction and evaluations of their practice</td>
<td>• Like / dislike of the treatment of low back disorder</td>
</tr>
<tr>
<td></td>
<td>• Effectiveness of physiotherapy</td>
</tr>
<tr>
<td>3. The scope of physiotherapy practice</td>
<td>• Recognition of patient needs</td>
</tr>
<tr>
<td></td>
<td>• Dealing with psychosocial and cultural dimensions of low back disorder</td>
</tr>
<tr>
<td></td>
<td>• Interaction and relationships</td>
</tr>
<tr>
<td>4. Factors influencing the physiotherapeutic process</td>
<td>• Professional influences</td>
</tr>
<tr>
<td></td>
<td>• Beliefs of physiotherapists</td>
</tr>
<tr>
<td></td>
<td>• Socioeconomic issues</td>
</tr>
<tr>
<td></td>
<td>• Cultural influences</td>
</tr>
<tr>
<td>5. Strategies for developing physiotherapy practice</td>
<td>• Communication</td>
</tr>
<tr>
<td></td>
<td>• Independent physiotherapy practice</td>
</tr>
<tr>
<td></td>
<td>• Use of new approaches to management of low back pain</td>
</tr>
</tbody>
</table>
6.9.1 Participants' characteristics and clinical behaviour

The age, years of experience, gender and place of work of participants are presented in Table 6.2. It seems that characteristics of participants were reflected in the focus group discussions providing a variety of views that provided the discussions with a holistic picture of the physiotherapy management of LBP in the Gaza Strip. During their introduction of their experiences of the management of LBP patients, participants demonstrated their approaches and techniques they used in this process. They described their clinical behaviour and the factors contributed to these behaviours during their daily clinical practice. Categories contributed to this theme were captured as implications for physiotherapy delivery in the Gaza Strip. These categories illustrate the participants' clinical behaviour throughout the physiotherapeutic process and its impact on the outcome of treatments.

6.9.1.1 The diagnosis "low back pain" and the referral to physiotherapy

"Diagnosis" and "referral" in this context refer to the description of the problem of LBP and to the request for physiotherapy provided by the referring doctor. Participants were generally dissatisfied with the doctor's referral and the diagnosis "low back pain". They highlighted the importance of diagnosis as a guide for physiotherapy:

The diagnosis made by doctors also does not help us. Doctors do not provide us with details of the patient's problem. The referral only includes "low back pain". This complicates the process of management (M3).

The diagnosis depends on the degree of pain the patients feel (F7).

I have seen many cases who told me that they have been informed by doctors that they have prolapsed disc and actually they just had some muscle spasm (M2).

Participants believed that NSLBP is always associated with tissue damage:

The diagnosis (LBP) is a problem. It does not tell you the pathology involved (F2).
Referrals only include the diagnosis 'low back pain'. We need to know if there is any pathology detected, and the history of patient's suffering and management (M1).
I believe that most cases with low back pain are due to bad posture (F8).

Some participants stated that doctors referred LBP patients to physiotherapy late which could affect the outcome of physiotherapy:

Most of cases of low back pain come to physiotherapy after a long period of suffering and failure of medical management (M3).
Patients trust their doctors, and the doctors refer their patients to physiotherapy very late. I had a patient come to me for physiotherapy after fifteen years complaining of low back pain (F7).

6.9.1.2 Physiotherapy assessment and plan of treatment

During their discussion of the physiotherapeutic process, participants discussed their assessment and treatment processes. The discussion revealed that most participants did not consider the physiotherapy assessment and they relied on doctor's referral and patient preference in the therapeutic process:

When you are a good physiotherapist – I mean you have self-confidence, capable of demonstrating your physiotherapy knowledge and skills – both doctor and patient will respect you and communicate as well ....(M8).
Some patients believe strongly that electrotherapy equipment is something important, and so I feel that using electrotherapy equipment enhances their improvement (F2).

6.9.1.3 Physiotherapy approaches and modalities used in management of low back pain

Discussion related to this topic demonstrated that participants of this study were aware of the psychosocial dimension of LBP but this dimension was outside their scope:

I am not a psychologist to treat patients with psychological problems (M6).
We are physiotherapists not social workers. We cannot go to the home with the patient to improve their mental outlook. All the patient is doing is evacuating what is inside her, she is complaining to me. How can we sort her problem – with her mother-in-law, with her sister-in-law..... it is different. How can I sort the presenting problem, which is low back pain, when the causes are psychological? (F1)

These findings are with line with findings obtained by previous study of this research reported in Chapter Five of this thesis. Although participants were aware of the psychosocial influences on the management of low back disorder, they did not consider this in their physiotherapy practice.

Participants also discussed the physiotherapeutic modalities they used in the management of low back disorder. They stated that they used all traditional modalities of physiotherapy in their treatments. They identified massage, heat, exercise, advice and positioning as beneficial in management of LBP. Participants varied as to what they considered most important:

I use massage and deep heating - shortwave diathermy – but exercise is the most and important modality I use in my treatments (M3).

Deep massage or superficial massage is the most important thing in dealing with these patients (F3).

I advise my patients to get some rest and practice good positioning (M4).

Despite positive attitudes towards some physiotherapy modalities, participants' choice of physiotherapy modalities was dependent on the patient's preference:

I always focus on positioning, hot packs and exercise. Sometimes I provide electrotherapy. Advice is very important in this subject. I teach my patients home exercise. Massage, which I do not use much, is effective and relaxes the muscles. I also use it sometimes with patients who come specifically asking for it (M8).

There are some patients who believe in electrotherapy equipment and they would like us to apply this (F6).
6.9.2 Participants' satisfaction and evaluations of their practice

Participants showed satisfaction about the outcome of physiotherapy. They strongly suggested that physiotherapy could be effective in terms of reduction of pain and improvement of function if it was practised properly. On the other hand some participants were not satisfied with the outcome of their treatments. This theme was emerged throughout the discussion of this open-ended question: "in your opinion, is treatment of patients with LBP motivating and enjoyable? .......... Why? Why not?". Categories contributed to this theme were like and dislike for treating LBP and effectiveness of physiotherapy.

6.9.2.1 Like and dislike of the treatment of low back disorder

From the male group, four participants clearly stated that they liked to treat patients with LBP, two participants did not like and two participants were not enthusiastic to treat this group of patients. The female group showed less enthusiasm as only two participants were motivated to, two participants did not like and three had no enthusiasm for treating this group of patients. Every participant demonstrated justification for his/her desire which reflected their perspectives on the management of low back disorder:

I personally, although I have treated many patients with low back pain, do not like to treat low back pain. I do not like the fact that most of our patients have bad posture (M7).

Yes of course I like to treat low back pain patients. I am satisfied when a patient comes not knowing the problem and I am able to alleviate the problem. This makes me happy (F3).

I personally do not always like to work with low back pain patients. I tell her how to sit, how to stand, how to handle her household duties, it is impossible as a woman in our society to do so. In our society it is very difficult to follow and apply these instructions, therefore the plan of treatment is useless. The thing which makes me frustrated is that after a while the pain comes back and the cycle will continue (F1).
6.9.2.2 Effectiveness of physiotherapy

Although the outcome of participants' treatments was controversial, participants were generally satisfied with the effect of physiotherapy on improvement of LBP:

*This does not mean that low back pain patients do not improve. On the contrary, there are many cases which improve. If you work appropriately with the patient it will have results (F3).*

*Yes of course I do like to treat low back pain patient, because the outcome of treatment of these patients is good (M2).*

*I enjoy treating patients with low back pain. My treatment gives fast improvement despite that not always being complete recovery. Physiotherapy can relieve back pain, at least temporarily (M4).*

At the same time, some participants were not satisfied with the outcome of the physiotherapy they provided for patients with LBP:

*Recurrent pain is frustrating for both the patient and the physiotherapist. I do not enjoy this job (M5).*

6.9.3 The scope of physiotherapy practice

During the discussion of the patient's expectations from physiotherapy and from the physiotherapist, participants were aware of the patient needs and the necessary elements for successful management. They spoke highly about the psychosocial and cultural influences on the progress of LBP and the importance of confidence and open communication between the physiotherapist and the patient and the referring doctor for better outcomes of physiotherapy. Categories contributed to this theme were recognition of patient needs, dealing with psychosocial and cultural dimensions of low back disorder and interactions and relationships.
6.9.3.1 Recognition of patient needs

Participants expressed a considerable awareness of LBP patient needs and expectations. They recognised the burden of the psychosocial and cultural influences on the management of low back disorder:

Most of the low back pain is psychological. We are in Palestine and we suffer from many stresses and it is impossible to get rid of these problems (F7).
Non-specific low back pain may be psychosocial (F5).
I remember 4 or 5 cases where there are problems and the woman wants to get her husband's attention (F4).
The patient is expecting us to talk to him and to answer his questions (M6).
I can assure you that many patients are willing to talk about their psychological and social condition (M3).

Participants recognised the importance of cooperation and confidence of a patient in the management of LBP:

Indeed, what you mention exists, but if you gain the patient's confidence you might overcome this problem (M4).
There must be full cooperation between patient and therapist (M3).
To cooperate with the patient, the patient must have confidence in us (M6).
You need to gain a patient's confidence (F4).

Some participants stated that confidence between patients and physiotherapists was missing:

Confidence is missing (F5).

Some participants, however, argued that lack of patient confidence was a response to physiotherapists' own attitudes:

But the confidence depends on me – so I can build it or lose it (M4).

Other participants indicated that lack of patient confidence could be due to cultural issues:

By the end of the day, in this country, they only have two popularly recognised professions in the health system: doctors and nurses (F5).
The role of the patient in the management of LBP was also recognised:

_The patient himself could play an important role in management of his low back pain. A successful physiotherapist is the physiotherapist who explains the condition to the patient and asks him to take part in the management (M8). The patient has a role in adapting to the circumstances as much as they can (F7)._  

### 6.9.3.2 Dealing with psychosocial and cultural dimensions of low back disorder

Although participants in both focus groups recognised the impact of the psychosocial and cultural problems on the management of LBP, they were not enthusiastic to deal with such problems:

_But I am not obliged to look at the other aspects — I don't deal with the psychological or social aspects, I deal with the pathology. This is what is known. But this is wrong and we should deal with the problem from all aspects (F1)._  

Some participants argued that their clinical behaviour was a response to the patient behaviour resulted from the negative environment in which to practice physiotherapy:

_We meet patients who do not trust us and are just coming for the physiotherapy recommended by the doctor. They believe in doctors and their recommendations. Many patients ask me at the beginning of their treatment to treat them as ordered by the doctor (M7)._

### 6.9.3.3 Interaction and relationships

Although the importance of positive interaction with and relationships between physiotherapists and referring doctors was dominant in the discussions, participants stated that there was no communication between them and doctors:

_We do not communicate with doctors any way (M1).  
Doctors do not listen to us (F2)._
They described cultural and professional factors as implications for physiotherapist-patient relationships:

*You do the best treatment for them, everything possible, and after a while they will go to your colleague – and of course they will say 'oh, that one wasn't really very good' (M5)*

*This problem exists very much among our people. They think the physiotherapist is working under the doctors' instructions. This is big issue in our country (M6).*

*In this society, people know (only) doctors and nurses (F3).*

### 6.9.4 Factors influencing the physiotherapeutic process

Participants were generally dissatisfied with their physiotherapeutic inputs. The focus group discussions showed a gap between participants' knowledge and their clinical practice. Participants believed that their clinical performance was faced by professional, socio-economic and cultural barriers.

#### 6.9.4.1 Professional influences

The hierarchy of health care system in Gaza, the physiotherapist-doctor relationships, number of patients, patient work and daily physical activities, recognition of physiotherapy practice and the lack of patient confidence were highlighted by participants as having implications for physiotherapy practice. They described the patient referral system, superiority of doctors and lack of awareness of physiotherapy as barriers to successful physiotherapy:

*The first thing is for the physiotherapy profession to be reorganised, and for physiotherapists to take up their role and responsibilities fully (M4).*

*They (doctors) will not listen to us....., their superiority will not permit this.*

*The problem is that we have too many low back pain patients (M7).*

*I believe the most important part of the treatment is the relationship between the patient and the therapist (F6).*
6.9.4.2 Beliefs of physiotherapists

Participants believed that patient work and daily physical activities during the course of physiotherapy would hinder the outcome of physiotherapy:

*Physiotherapy will never be effective if women continue their hard work at home. Patients do not follow our instructions, but continue working (F1).*

*Economic status is important .... Low-income patients cannot stop work to enhance the outcome of physiotherapy (M6).*

6.9.4.3 Socioeconomic influences

Participants believed that the socioeconomic status of patients in Gaza had affected the outcome of their treatments:

*In our houses there is no space to do exercise [especially in the refugee camps], and in our overcrowded conditions there is no privacy, so where will she go? And therefore she will not improve (F7).*

*I also noticed that most of our patients are unemployed. I believe that these people have muscle tension due to lack of physical activities and psychological disturbance. And this seems to have implications for physiotherapy (M1).*

It appeared that the social role of woman in the Gaza Strip had contributed to more utilization of physiotherapy. Participants of this study noticed that some women came to physiotherapy for psychosocial purposes:

*The minute you put your hand on the patient, everything will disappear (F4).*

*Some patients are crafty – they don’t want to be discharged (F7).*

*This means ‘look after me (F1).*

6.9.4.4 Cultural influences

During their discussion of the effectiveness of their treatments, participants highlighted that patient’s culture had impacted on the effect of physiotherapy. People in Gaza use the word *Inshallah*, which means *God willing*, when answering questions
about their health. The use of this word causes confusion about whether there is improvement or not, or whether pain is more or less:

And the next session you will ask the patient again and he will say "Insha'allah". This is very frustrating, and is different from other cases (M1).

Low back pain patients in general complain and every time they come back they complain more, they will say 'insha'allah akhsan' [God willing, better]. I would like to know whether it is really better to stay in the same line of treatment or to change to a different approach. I would like to know whether I am doing things right or wrong. This is very frustrating (F4).

6.9.5 Strategies for developing physiotherapy practice

At the last part of the focus group discussions, participants discussed the following question: "How do you think we can improve the effectiveness of physiotherapy for patients with low back pain in Gaza?". During this discussion, participants put particular emphasis on their need to communicate with patients and doctors and working independently. They also highlighted the importance of following approaches which enable them to deal with the psychosocial dimensions of the problem of LBP.

6.9.5.1 Communication

Open communication between physiotherapist and patient was perceived by participants to be very necessary for improving physiotherapy practice:

The most important thing is to listen to the patients and know their problems (F5).

To cooperate with the patient, the patient must have confidence in us (F2).

When the patient has confidence in you, you give her the treatment and she improves (F3).

When the patient tells you his story, he expresses his feelings of anxiety and tells you his social troubles throughout his journey with the problem (M3).

Participants also highlighted the importance of communication with referring doctors:

We should cooperate with doctors for benefits of our patients (M8).
6.9.5.2 Independent physiotherapy practice

Participants were frustrated with the awareness and recognition of physiotherapy in Gaza. They expressed great needs for working independently:

*We need our profession to be recognised, we should take up our responsibilities and work with doctors as a team (F1).*

6.9.5.3 Use of new approaches to management of low back pain

It seemed that during the focus group discussions, participants realised the limitations of using the biomedical model in management of patients with LBP. They suggested new approaches for managing patients with low back disorder:

*In addition we should support patients from psychological and social perspectives. We should listen to them and reassure them and give them enough time for massage and heat (F6).*

*But the first important thing is to deal with the patient as a person (M4).*

Some participants were not fully confident of their abilities to change:

*We might need to do courses or workshops in order to apply it professionally.*

*We are already able to it in a limited way but we don't know whether we are applying it in the most effective way (M2).*

6.10 Discussion

From the focus group discussions it would appear that, in Gaza, dealing with patients with LBP involved physiotherapists in a process of health care provision, in which physiotherapists provided treatment, against a background of poor communication between professions and limited adherence by patients, influenced by a range of professional, psychological, social, economic and cultural factors. As recommended by Hendriks et al., (2000) and CSP (2006), the changing nature of relationships between health care providers and patients, coupled with changing patterns of morbidity, have contributed to the realisation that more complex patterns of interaction are required to improve adherence, quality of life and clinical outcomes for
patients with long-term disease. The physiotherapeutic process requires the patient to engage in a "therapeutic alliance" (Hendriks et al., 2000) with the therapist to become active participant in therapy, perform exercise programmes unsupervised at home and help identity quality outcomes. Practising this approach seems difficult because practitioners and patients may have differing understandings and feelings about particular clinical problems (Borkan et al., 1998). Beliefs about LBP may differ between patients and health care providers and one approach may not be convenient for different individual sufferers (Chown et al. 2008). Hearing how physiotherapists approach, treat and evaluate their clinical practice can be an important point in developing physiotherapy for patients with LBP in the Gaza Strip. Discussion of the findings is based around the themes identified, allowing interpretations to be kept within context.

6.10.1 Participants' characteristics and clinical behaviour

Participants discussed the physiotherapeutic process of LBP and their clinical practice in the Gaza Strip. They spoke of methods of treatment and their effectiveness, the system of health care and the factors influencing this process. Findings from the current study showed that physiotherapy practice in the Gaza Strip depended on a referral given by doctors. Participants stated that such referrals do not include enough data to enable physiotherapists to provide appropriate, structured physiotherapeutic management. It seemed that these restrictions impacted on the participants' characteristics and clinical behaviour. However, participants expressed a desire to participate more actively in the physiotherapeutic management if restrictions could be overcome.

Beckkering et al (2003) argue that it is often not possible to find impairment in anatomical structures causing symptoms. They believe that, even if impairments are identified, they may not explain the development and continuation of the complaints and diagnostic interventions should focus on relevant disabilities and participation problems. In the light of this, the objectives of the diagnostic process are to assess the severity and cause of LBP and its consequences, and to evaluate to what extent physiotherapy can influence the problem. It seems likely that this should include
taking into account the psychosocial issues thought to be associated with LBP. Assessment, plan of treatment and evaluation cannot be achieved without active contributions of physiotherapists, as well as doctors (Goldstein et al., 2002).

Review of relevant literature has indicated that there is still a gap between the principles outlines in the paragraph above and actual practice in western countries (Foster and Doughty, 2002; Overmeer et al., 2005). Whilst there is no evidence that this topic has been investigated in Arabic countries, it is thought likely that the situation will be similar. The Gazan data indicated a lack of quality of physiotherapy provided for patients with LBP, with implications for deficits in health care and physiotherapy education in the Gaza Strip. Findings of this study also suggest that there is a lack of health policies that organize professional relations and improvement in physiotherapy practice require establishing local codes and policies for physiotherapy practice in the Gaza Strip.

Participants stated that they used different modalities of physiotherapy for patients with LBP. It appeared that their choice was based on pain distribution and severity which indicated that they followed a biomedical model of management:

_I will treat these cases as if there is real pain. I support her, remind her of many things, but at the same time cannot do that much for her (F4)._ 

Therapeutic modalities routinely used in practice, such as massage and electrotherapy are described by many physiotherapy textbooks. In their reviews, van Tulder and Koes (2004a, 2004b) found that these therapeutic modalities are used in Europe and North America, but there is no evidence to suggest that the effectiveness of these modalities have been examined in the Arab world

When speaking from a theoretical stand point the participants described these modalities as effective and beneficial in treatment of patients with LBP. However, they felt that despite having mastered the theoretical knowledge and skills required for pain management, there was little actual evidence of improvement. Improvement was judged in terms of pain reduction and improved function. The findings demonstrated unclear effectiveness of the treatment modalities used by participants. This evidence reflects a gap between the theoretical knowledge of participants and their clinical practice.
These findings are supported by evidence from systemic reviews into the lack of effectiveness of most treatment modalities, except exercise therapy which has been found useful in the treatment of patients with chronic LBP (Bekkering et al., 2003; van Tulder and Koes, 2004a,b). In exercise studies, increased uptake is generally associated with decreased depression and an enhanced self-esteem (Morgan, 1984; Sculco et al., 2001).

It was noticed in focus group discussions in Gaza that there was a gap between what physiotherapists said about the effectiveness of physiotherapy and what they said about patient improvement. Similarly, the literature shows a gap in western countries between physiotherapy practice and theories enshrined in LBP guidelines (Foster et al., 1999; Cook and Hassenkamp, 2000; Gracey et al., 2002), and several studies (Foster and Doughty, 2002; Overmeer et al., 2005) have identified reasons for this discrepancy. A cross-sectional study in primary care in Sweden found that 42% of physicians and 37% of physiotherapists surveyed were unfamiliar with the content of LBP guidelines, while conversely stating they supported their usefulness in clinical practice (Overmeer et al., 2005). A qualitative study by Foster and Doughty (2002), involving musculoskeletal physiotherapists in the UK identified several barriers to guideline implementation, such as lack of emphasis on guidelines and research in practice settings, limited access to, and education on, information technology, lack of education in some interventions, some disagreement with the guidelines and beliefs that they are of limited use to physiotherapists.

In Gaza, there are currently no guidelines or policies for management of LBP, such as those available in the UK (CSP 2006). The researcher suggests that guidelines need to be developed for Gaza, in order to improve the effectiveness of physiotherapy and the patient experience. In the study presented in this chapter, participants illustrated the inconvenient clinical behaviour of practice of physiotherapy, poor quality of referrals to physiotherapy, lack of cooperation between doctors and physiotherapists and the contextual barriers impacting on LBP in Gaza as factors limiting improvement of patients. Any guidelines produced would need to take into account these barriers.
Such guidelines could be developed and implemented through specific postgraduate education which would emphasise the integration of the effects of physiotherapy with an understanding of the influence of psychosocial factors. It is hoped that this would transform physiotherapists' practice and experience. This approach to management of patients would focus on problem solving which is central to methodical physiotherapeutic management. This management would incorporate history taking, physical examination, analysis and formulation of the physiotherapeutic diagnosis, treatment, evaluation, conclusion and the written final report (Hendriks et al., 2000).

While most of these issues can be dealt with through physiotherapy guidelines, the issue of inadequate and late referral would need to be dealt with elsewhere. Appropriate referral is considered to include data on patient needs and expectations, reason for referral, the course of disability and participation problems and information about additional diagnostic procedures and prognosis (Lin et al., 2006). Possible reasons for this will be discussed in next section.

It does not seem possible to improve this unsatisfactory situation in the Gaza Strip without radical changes in health care policies, changes in attitudes of doctors and support for physiotherapy autonomy, in addition to changes in physiotherapists' education. However, it is hoped that the results of this research will form a solid basis for a review of the overall management of LBP in Gaza.

6.10.2 Participants' satisfaction and evaluations of their practice

The study participants' evaluations of management of low back disorder focused largely on mechanical factors such as poor postures, recurrent pain and aggravating factors associated with it as well as the patient behaviour. At the same time, it was clear that the extent to which these factors impacted on their attitudes towards management of LBP varied. The categories contributing to this theme illustrates the complexity of dealing with patients with LBP in Gaza and the need for development.

Participants of this study were generally not satisfied with their clinical practice and its outcome. Some patients went further to the point that they would not like to treat
such cases. This thought was not related to participants' knowledge and skills, but to the connotations related to the negative environment of physiotherapy practice and patient behaviour. They all viewed themselves as dependents and their patients as passive consumers of physiotherapy and not helpful for successful management. This circumstance inspired in them feelings of frustration and that they lost their actual role in their profession. However, despite the negative indicators of engagement described, some participants demonstrated sustained effort to work independently.

In order to function as a physiotherapist in different situation and contextual environments, it is necessary to get the knowledge and skills required (CSP, 2006). Professional intervention requires the use of rules and ethical principles in accordance with science and clinical practice. In developed countries, the physiotherapy management of LBP is guided by professional standards of practice, clinical guidelines and Government directives. In the UK, the Chartered Society of physiotherapy states that there should be systems in place to ensure that all physiotherapists provide care based on the best-available evidence of effectiveness (CSP, 2000). In this context, research reports and articles have to be read and reflected upon, and must therefore be written in such a language that they can be easily understood. Theories that cannot be tested or evaluated, or which are not relevant or useful in busy clinical setting, will seldom be implemented. Physiotherapy intervention must be based on individual responsibility as well as on a high degree of competence and high-quality clinical decision-making.

A review of the literature on physiotherapy management of patients with LBP revealed that, in Arabic countries, clinical guidelines for management of LBP have not been established yet and the few published work on this topic was written in foreign languages. Moreover, continuing education and continuing professional development are central to improvement of health care, including physiotherapy. In physiotherapy, continuing professional development includes areas of personal and professional development that should begin from commencement of undergraduate education (Yeomans, 1995). It incorporates clinical proficiency as well as non-clinical activities such as information technology, management, leadership and communication skills. It is dependent on the ability to critically evaluate through clinical reasoning and reflection (Cooney and Blake, 2000).
Participants of this study were under occupation and siege, without national government directives and physiotherapy profession was not well known to the general population in Gaza. In addition, local facilities and programmes of continuing education and continuing professional development were not available in Gaza. It is evident that these factors affected participants' satisfaction and evaluations. Findings in this study provided rich insights into physiotherapy practice and are useful data for developing physiotherapy education and practice in the Gaza Strip.

6.10.3 The scope of physiotherapy practice

Findings from the current study showed that participants were aware of the needs of LBP individual sufferers. They demonstrated an understanding of the aggravating factors impacted on management of LBP such as culture and psychosocial problems. Despite that they reported their disappointment of the outcome of their treatments. They recognised deficiencies and deficits in their clinical practice and pointed out professional issues as implications for physiotherapy practice in the Gaza Strip. These professional issues related to participants' relationships with their patients and referring doctors. Participants found it difficult to deal with psychosocial problems and believed that this part of management was beyond the scope of physiotherapy practice.

As LBP is described by Hrudey (1991) and Waddell (2004) as one of the least understood painful conditions and a major challenge for health care providers, cooperation between health care providers would seem to be crucial. Participants stated that there was no communication between them and the referring doctors and that their patients lacked confidence in physiotherapists as health providers. They identified attitudes of doctors, which hindered relations between the professions. The findings indicated that participants experienced the effects of a professional hierarchy and a power differential which impacted upon their ability to act professionally towards patients and be perceived as professionals by patients. Population studies have illustrated that higher confidence in treatment of LBP has beneficial effects on the course of the disorder (Goldstein et al., 2002) and patient behaviour is important.
in the development and maintenance of chronic pain and pain disability (McCracken and Eccleston, 2003).

There are cultural variables to be considered when thinking about communicating between people of different levels of power and seniority. In Arab countries, differences in behaviour are expected of people in different social classes. Usually, in Arab cultures, upper class people such as doctors behave in a superior way towards nursing and allied health profession colleagues in order to maintain their status and good public and professional image (Nydell, 2002). It seemed that participants' clinical proficiency was affected not only by doctor's cultural norms but also by patient's cultural behaviour in which patients perceived physiotherapists as tools of management and doctors as professional decision makers. However, cultures continue to modify themselves, influenced by technology, research-based evidence, and political changes (Main and Spanwick, 2000). Access to the internet and exposure to more democratic organisations during study and work in the west may also make health professionals more receptive to cultural change. It should also be possible for hierarchical inter-professional behaviour to be influenced through professional regulations and codes of professional practice in Gaza, but it would need to involve the whole range of health professions, not just physiotherapy.

6.10.4 Factors influencing the physiotherapeutic process

During their discussion of their physiotherapeutic process, participants highlighted a number of factors as implications for physiotherapy practice. An evidence that participants' clinical behaviour was not in line with successful practice could be captured from their attitudes and their passive role they demonstrated in management of associated problems with LBP. Participants argued that their clinical behaviour was affected by factors related to restrictions put on their profession and other factors thought to be barrier to patients to take active role in treatment of their condition.

The literature has reported a consistent association between psychosocial factors, such as depression, stress symptoms, lack of social support, and LBP (Linton, 2000; Buer and Linton, 2002; Picavet and Schouten, 2002). Although participants in this study
did not consider these factors expressed in these words in their treatment, they expressed similar sentiments through stories and descriptions of patients. Participants described their patients as depressed and in need of psychosocial support. They also recognised differences in attitudes of patients towards them and towards doctors; in that they trusted doctors and accepted their advice, but did not expect physiotherapists to give advice, just to apply the modalities ordered by the doctor.

It would not be surprising that patients trust doctors in light of the hierarchical structure of Arab society: in Hofstede’s terms this society displays a large power difference and is strongly masculine (Hofstede 1991; Noorderhaven 1999), but this lack of trust and respect for physiotherapists was frustrating for participants. These patient-physiotherapist relationship situations may be due to the patient, the physiotherapist or to the way they interact in the therapeutic situation. They may also be due to the general social context. It is possible that patient attitudes in Gaza are due to a combination of all these factors, in line with Hofstede’s cultural dimensions.

Cherkin and MacCormack (1989) have argued that patient-physiotherapist relationships can be “therapeutic” in positive terms or detrimental to effective therapy. Studies in patient-health care provider relationships, particularly concerning the cause of the patient’s disorder, highlighted the importance of patient-therapist agreement in the management of LBP. It has been suggested that agreement is strongly associated with a rapid resolution of the symptoms or with a positive perception of their evolution during treatment (Cedraschi et al., 1996; Perreault and Dionne, 2005). Patients who have the impression of having actively participated in treatment have been shown to have a more positive evaluation of their condition and better outcomes and describe their relationship with therapists as more satisfying (Andersson at al., 1991). Recently, Perreault and Dionne (2005) suggested that gaining a better understanding of the level of patient-physiotherapist agreement and identifying the correlates of agreement may help improve physiotherapy interventions with people with LBP. Findings in this study showed lack of communication between physiotherapists and patients which affected the satisfaction of patients and outcomes of physiotherapy.
Many participants in the study linked poor outcomes of physiotherapy to patients' living conditions, work responsibilities and social behaviour which interfered with patients' abilities to carry out a home physiotherapy programme. Interestingly, other research indicates that advice to stay active results in a faster return to work, less chronic disability and fewer recurrence problems in patients with LBP (Waddell et al., 1996; Van Tulder et al., 2000; Bekkering et al., 2003; Waddell and Burton, 2005). In Gaza the political, economic and cultural situation means that most patients have no choice but to remain active and stay in work or return quickly, yet they do not seem to demonstrate the benefits that the researchers who have been working in the west have indicated. Further exploration of this issue is necessary.

Previous studies have acknowledged the influence of culture on the management of LBP (Eccleston et al., 1997). In this study, participants spoke in depth about culture which when the data were analysed, emerged as a potential barrier to successful physiotherapy. No direct reference to the role of Arabic culture and its influence on physiotherapy for patients with LBP was made. However, this was addressed, indirectly, by many participants when justifying their professional behaviours.

Participants described patients' use of the word “Inshallah”, meaning “God willing” when asked about their progress, as misleading as the physiotherapist had to interpret whether this meant “God willing, I am progressing well” or “My lack of progress is in God’s hands”, because it does not give a direct answer. In religious terms, the word “Inshallah” does not necessarily indicate uncertainty if the speaker intends to express his/her feeling about an important issue, but culturally it may not be clear in what sense the word is being used. The therapist may interpret the word as a lack of confidence and dissatisfaction with treatment rather than a cultural expression.

Although participants admitted a lack of communication with their patients, they agreed that patients' pain beliefs are an important element in pain management. This evidence shows a gap between theory and practice in the implementation of physiotherapy in the Gaza Strip. For many participants patients' pain indicated the presence of tissue injury which focussed their attention on biological and physical concerns and limited their psychosocial evaluation of the patient.
The significance which people attach to symptoms is based on subjective perceptions and interpretation of stimuli which may be culture-related (Main and Spanwick, 2000). The extent to which patients feel that they have control over pain is central to the management of LBP. They may feel that their health is controlled mainly by themselves (internal locus of control), or by health care providers (external locus of control) (Harkapp, 1991). In Arabic society, it is generally believed that patients give Allah and doctors control over their health, demonstrating an external locus of control and traditionally don’t expect to take any responsibility for their health (Ahmed, 2004). In this model, when pain is considered a sign of possible injury, it is likely that this will result in fear of movement. On the other hand, it has been illustrated that an internal locus of control is often related to active coping and, subsequently, to a better way of dealing with the pain (Jensen et al., 1991). There are still many aspects of Gazan society that are traditionally Arabic. However, particularly younger and better educated citizens, have developed more cooperative approaches to health care because of influences from Israel and western expatriate health workers. Whilst there is no research evidence for this, the author has observed this trait in patients referred to Israeli hospitals for specialized treatment not available in Gaza. These issues suggest that there are facets of Arabic culture that could influence the outcome of physiotherapy in patients with LBP; and that participants in this study did not make enough effort to consider the importance of these cultural factors in their treatment.

When considering factors influencing health care in the Gaza Strip, it is necessary to consider the economic status of many of its citizens, which has affected access to physiotherapy and influenced many psychosocial aspects of daily life. This study took place when people in the Gaza Strip were experiencing severe deterioration of their economy with high rates of unemployment and increases in living costs. Participants described the economic situation as a barrier to patients' adherence to physiotherapy and a hindrance to successful outcomes of physiotherapy. Indeed, in Gaza, access to physiotherapy required people to pay medical insurance which was difficult for many families when this study was conducted.

Participants linked successful physiotherapy to patient restriction of work which was considered to lead to pain relief and problem resolution. This seems to indicate that participants treated their patients by a pure medical approach; confirming the results
of the study presented in Chapter Five. These findings suggest that there is a need to address the need for a more active patient role in management of LBP which might reduce physiotherapy costs in Gaza.

This discussion of the categories contributing to the theme of factors influencing the physiotherapeutic process illustrates the complexity of this process. The literature includes a plethora of data and theories which are different to the professional behaviour and relationships and physiotherapist-patient relationships observed in this study. These new insights into physiotherapy provided for patients with LBP in the Gaza Strip, highlights the need for further research in non-western contexts. Additionally, there is a need to match physiotherapy education and practice to the specific needs of Gazan patients and society.

6.10.5 Strategies for developing physiotherapy practice

Participants showed enthusiasm to develop strategies for the management of patients with LBP and generated suggestions and ideas for improving their practice. It can be seen from their responses that they recognised gaps in their practice and professional relationships and desired to make changes. They suggested open communication with patients and doctors and adopting new management approaches for successful physiotherapy practice. They also emphasised their need to work independently.

The way participants developed their opinions and suggestions for improvements to management during the focus group is supported by Nordin's et al., (1996) work, which suggested that such situations force clinicians dealing with LBP patients to look beyond traditional treatment that assumes a linear connection between pathology and symptoms. However, despite the overwhelming interest in using a biopsychosocial approach in the management of patients with LBP, its implementation in the Gaza Strip would seem to be difficult without significant changes in health policies, attitudes of referring doctors and increased patient awareness.
6.11 Implications for physiotherapy practice

An understanding of the views and experiences of participants undoubtedly facilitates the provision of culturally appropriate health care (MacDermott, 2002) and should encourage an active role for patients with LBP in controlling their health. The identification of gaps in physiotherapy practice is valuable and physiotherapists and physiotherapy educators need to consider revising curricula of study and treatment principles in light of models of health, local health needs and cultural values. This will hopefully contribute to improving physiotherapy practice in general and effective implementation of culturally-based physiotherapy practice for patients with LBP in particular. For physiotherapists who are already qualified, a post graduate programme needs to be developed that addresses these issues, possibly in a multi-professional context to encourage better teamwork. Physiotherapists might also be encouraged to consider strategies for the education of the general population about LBP.

The findings of the Gazan study indicate that physiotherapists are affected by the negative environment of professional restrictions and attitudes of doctors. These issues should be included in health care policy planning and physiotherapy education and practice.

6.12 Conclusion

The findings of the study described in this chapter demonstrate that physiotherapists in the Gaza Strip treat patients with LBP by traditional modalities through a traditional approach. They believed that these modalities were useful if applied appropriately. These findings were obtained by using a research approach that considered culture, communication, professional and social interactions. It was noted that a strongly hierarchical set of relationships and behaviours exists between doctors and physiotherapists that has implications for both communication between health professionals and physiotherapy practice itself. It is not possible to capture all aspects of such a complicated topic as ‘culture’ in a study of this sort, but the results of the study have highlighted important aspects of culture that impact on patient-
physiotherapist communication and doctor-physiotherapist communication and can be used as a basis for future research.

Since this study sought to gain insights into the experience of physiotherapists, it is hoped that descriptions provided will improve understanding of such experiences and demonstrate the benefits of qualitative research to physiotherapy literature. It is hoped that the findings will be embraced by physiotherapists, doctors, physiotherapy educators and health care policy makers in Palestine to improve physiotherapy practice for patients with LBP and to encourage further research in this area.

In the next chapter patient perceptions about their experience of LBP and patient journey from first episode of pain to physiotherapy management will be explored.
Chapter Seven

Experiences of Patients who received Physiotherapy for Low Back Pain

7.1 Introduction

Low back pain is a pervasive healthcare problem. It is a complex condition associated with a variety of physical disability, psychosocial problems and increased healthcare utilisation. The literature highlighted that healthcare providers have not reached consensus regarding the cause and nature of it (Van Tulder et al., 2006) which can lead to inconsistencies in the advice and subsequent treatment that is given to patients with LBP. Such inconsistencies may also shape the beliefs held by the sufferers in relation to their pain. Moreover, aside from the physical sensation of pain, LBP is characterised by the impact that it has on the individual's life. Associated anxiety, depression and stress are frequently cited as having an additional major impact on the lives of those who live with persistent LBP (Walker et al., 2006; Holloway et al., 2007). Hestbaek et al., (2003) have suggested that an individual's perception of their own pain and functional ability is very important for the way the problem impacts on the quality of daily life and should not be ignored. Knowledge of such experiences can help shape an effective management environment by providing health care providers with an appreciation of the lived experience of LBP sufferers thus enabling them to instigate a more patient-centred approach (Daykin and Richardson, 2004; Marie et al., 2010).

Experiences of patients with LBP have been investigated in many western countries. These studies have contributed to the development of guidelines and new approaches to the management of LBP (Koes et al., 2006; Van Tulder et al., 2006). Epidemiological studies indicate variations between countries and cultures in pain experience and strategies for dealing with LBP (Carron et al., 1985; Walsh et al., 1992). In the previous chapter, the researcher presented a study on the physiotherapists' views about current physiotherapy provided for patients with LBP.
In the study reported in this chapter, the researcher decided to gain insights on this topic from patients. The study aimed to explore the experiences of patients with LBP in relation to the management of their condition, their coping strategies and the impact of LBP on various aspects of their daily lives. Patients suffer, observe, develop personal knowledge and experience the consequences of the condition themselves. The study provides rich insights into the cultural background of patients, their suffering, satisfaction with the management they received and the impact of the problem on their lives. This chapter also discusses the literature about patients' experiences of learning to coping with LBP and seeking professional treatment and advice to deal with their pain.

7.2 Background to the study

Many people with LBP suffer persistent or recurrent pain (Croft, et al., 1998; Waddell, 2004) but the circumstances surrounding the transition from simple, so-called acute LBP to persistent/recurrent LBP are unclear. Patients with LBP have often undergone a range of treatments that have failed to relieve their pain and consequently have high levels of psychological distress (Walker et al., 1999; Walker et al., 2006). Avoidance of physical activities due to the fear of pain appears to be an essential feature of development of a chronic problem for a substantial number of patients. Such patients seek health care from a variety of health care professionals, some of who are now aware that LBP is a biopsychosocial problem (Koleck et al., 2006).

A number of studies have identified the stigma associated with chronic LBP and the social and personal impact of this (Walker et al., 1999; Walker et al., 2006; Hollway et al., 2007). A historical overview of clinical understanding of chronic LBP provided by May et al. (1999) illustrated that throughout the history of the condition the ways in which it has been understood have been strongly influenced by social and economic factors. These authors believe that the emphasis that LBP is a pathological entity of the extent to which the patient's account of pain was morally-trustworthy. The authors, May et al. (1999), added that this medical interest in chronic LBP continued throughout the early 20th century with debate about its relationship to
trauma and hysteria. However, with the increasing widespread use of X-rays in an attempt to establish the "validity" of LBP, the moral character of the patient became a central issue, for in the absence of visible organic pathology then the patient was regarded as either malingering or having psychological problems. Chronic LBP remains a contested condition today.

The main debate about LBP in the literature is related to the nature of the problem, associated limitations, coping strategies and treatment evaluation. A number of authors (Price, 1996; Baszanger, 1997; Smith et al., 1997; Walker et al., 2006; Campbell and Cramb, 2008; Oluwaleke et al., 2010) have advocated the use of qualitative research to elucidate the subjective experience of pain in an attempt to gain information about the socio-cultural context of the problem. Focus group methodology is a way of collecting qualitative data. It has been widely used by health researchers, particularly in the field of preventive health education (Silverman, 2005).

Seers and Friedi (1996) reported qualitative data gathered from semi-structured home interviews as part of an intervention study of relaxation training for chronic pain. They identified themes that may be considered to shape the views of patients with chronic pain including "relationships", "activities", "employment" and "lack of personal control". Although this study is 14 years old, it was well designed and could be generalised for patients with non-malignant pain such as LBP. Henwood and Ellis (2004) conducted focus groups to evaluate the impact of living with chronic neuropathic pain and focussed on pain coping strategies rather than contextual influences on adjustment. Walker et al., (2006) used an interpretative phenomenological approach, based on single narrative interviews to provide understanding of the lived experience of chronic back pain prior to seeking help from pain clinics. The authors identified the following themes:

1. How back pain gradually took a hold over patients' lives, as identified by Holloway et al., (2001).
2. How participants were rendered passive and helpless by medical, social security and legal system, as identified by Walker et al., (1999).
3. Issues that appeared to influence the participants' sense of loss and the ability of participants to come to terms with their situation.
4. How participants understood issues related to social adjustment.
The findings of this article illustrated that loss is a major theme to emerge. The authors concluded that material losses such as socio-economic losses are important issues for those of working age seeking help from pain clinics for chronic back pain, and may need to be acknowledged and addressed as part of therapeutic interventions.

Campbell and Cramb (2008) conducted a qualitative study to explore patients' perspectives of chronic LBP. They found that their participants reflected on how as a result of the chronic pain they were very different from their former selves and that when participants had to curtail employment and social activities they felt as though the pain and not themselves was in control of their life. More recently, Oluwaleke et al., (2010) conducted a pilot qualitative study, using focus group, aimed to explore the experiences of a sample of LBP sufferers who had participated in a randomised controlled trial which sought to determine the most efficacious dosage and frequency of spinal stabilisation exercise. This study provided insights into the experiences of the participants. Themes emerged from this study illustrate that such a study could provide important and useful information on the different dimensions of LBP including the impact of the treatment programme on patient's knowledge, understanding and adherence. With line of this study, Ong and Hooper (2006) have highlighted the importance of understanding the subjectivity of pain and patients' needs and priorities arising from that experience.

These findings reflects thinking of participants about back pain and its management, disability, work and incapacity and social benefits. Generalisation of these findings to non-western populations may not be relevant because of cultural and social differences. Despite the prevalence and level of disability associated with LBP there has been limited exploration of the subjective experiences which can impact across many facets of an individual's life. The way in which the individual perceives the impact and the way in which healthcare providers respond to the individual's expression of that impact, can influence her/his daily activities in a range of areas. In order to develop a better understanding of these factors, this study used a qualitative approach to explore the experience of LBP sufferers who received physiotherapy. The following sections consider important components of pain experience in patients with LBP.
7.2.1 Patient beliefs about the nature and treatment of low back pain

As mentioned earlier in this thesis, the causes of LBP are multi-factorial and the effectiveness of the methods used in its management is questionable. The fluctuations of symptoms and the transmission from acute to chronic pain with different levels of disability lead to difficulties in diagnosis and prognosis. In these circumstances, it is not surprising that patients hold beliefs about their pain based on anecdotal evidence, social influences, cultural values and availability and experience of healthcare. Cross-sectional studies (Jensen, et al., 1991; Jensen et al., 1994b; Williams, et al., 1994; Arnstein, et al., 1999; Turner, et al., 2000; Walker et al., 2006) suggest associations between patients' beliefs about pain and their level of physical dysfunction. The beliefs reported included: pain reduces physical activities, pain signifies harm, one has little personal control over pain and pain will be an enduring part of life in the future. They also suggested that beliefs may influence disability either directly or by influencing the patient's adoption of coping strategies (Turner et al., 2000). In the light of this, it would be safe to argue that patients' beliefs are important in the management and progress of LBP.

Patients vary widely in their beliefs about health care and their expectations about the outcomes of treatment (Main and Spanswick 2000; DeGood and Tait, 2001). Beliefs of patients about the cause of their pain and anticipated outcomes of treatment influence not only the selection of a particular treatment but also the likely success of it (Ferreira et al., 2004; Waddle and Burton, 2005). The belief that pain is unchanging and persistent is associated with poor outcomes of physical and psychological treatment (Williams and Thorn, 1989; Walker et al., 2006). This is because active participation of patients is important in improving and preventing pain and mechanical dysfunction. On the other hand, patients who believe that they have some control over their pain may be more likely to participate in, and benefit from rehabilitation programmes. These findings have been supported by many researchers in this area (Harkapaa, 1991; Jensen et al; 2000; Burton, 2005). Gibson and Helme (2000) also found that patients who hold the belief that pain is controlled by powerful
individuals and not by chance factors may be more likely to comply with pain management programmes. This can be seen in patients using active coping strategies.

It is because pain, like all experience, depends on meaning, that researchers have addressed the importance of psychosocial factors such as patients’ attitudes and beliefs, psychological distress, illness behaviour, levels of social support and physical activity related to LBP. For this reason, this part of the thesis investigated the effect of experience of LBP on beliefs of patients in the Gaza Strip about the nature and treatment of their condition and the influence of beliefs on the progress of symptoms.

7.2.2 Physiotherapy management of low back pain

Physiotherapy services, which are well established in public and private systems worldwide (WCPT, 2006) are widely consulted by LBP patients internationally (Philadelphia Panel, 2001; Stanley et al., 2001; Moore and Huriey, 2005). Gaza has no national LBP guidelines and the primary healthcare infrastructure remains undeveloped. While the physiotherapy management of LBP has been reported for many countries, there has been no indication that this area has been investigated previously in the Gaza Strip.

Different modalities of physiotherapy are currently used routinely in the management of LBP. Systematic review studies have demonstrated variation in the outcomes of different physiotherapy modalities used for LBP (Van Tulder and Koes, 2004a, 2004b), ranging between beneficial and ineffective to harmful effects (see Chapter 6, Table 6.1). Despite extensive efforts of healthcare workers to manage patients with LBP, the associated disability, inability to work and early retirement are increasing (Waddell, 2004). There is no clear consensus about the value of treatments used but there seems to be general agreement that variations in outcomes are influenced by patient beliefs and attitudes. The study reported in this chapter, investigated the opinions of Palestinian patients with LBP on physiotherapy treatment provided in the Gaza Strip.
7.2.3 The impact of low back pain on ability to work

Low back pain is recognised internationally as a major health, social and economic burden with direct and indirect costs accounting for between 0.8% and 2.1% of gross domestic product in some US and European countries (Henmila, 2004). This represents 27% of total disability payments (Leech, 2004), of which 37% of the direct costs relate to physiotherapy (Mandiakis and Gray, 2000). Disability has been estimated to affect approximately 15% of adults in any one year (Linton and Hallden, 1998). Of the two research traditions of LBP disability identified within the literature (Borkan et al., 1998), the first focuses on the physical impact of work on the development of LBP and sick leave in a working population. The outcomes of this research have led to the development of guidelines for ergonomic work environments, acceptable levels for work load and manual handling and lifting skills (Westgaard and Winkel, 1996; Viikari-Juntura, 1997). The second tradition focuses on the prevention and treatment of LBP and disability and has resulted in the development of the biopsychosocial approach to the management of LBP which addresses biomedical risk factors and psychosocial barriers for recovery and early return to work (Burton and Waddell, 1998; Koes, et al., 2001; Main and Williams, 2002; Staal, et al., 2003).

In Gaza, from the researcher's observation, most health care professionals use a biomedical approach in their management of patients with LBP, and the social roles and jobs differ from those in western societies. These reasons suggest that investigating the experiences of patients is important in the management of LBP.

7.2.4 Coping strategies

Lazarus and Folkman (1984) defined coping as the effortful attempt to adapt to pain, or manage one's own negative response to pain (Jensen et al., 1991). This definition of coping includes behaviour exhibited in response to pain regardless of the result. It may be behaviour that the pain sufferer himself, or the clinician, judges to be purposeful and goal-directed. In light of this, it can be argued that there are vast amounts of patient behaviour that may not be evident.
It has been suggested that patients cope adequately or inadequately with their complaints, depending on the type of coping strategy (active or passive) used (Lazarus and Folkman 1984). In active coping, patients are said to adjust the level of their activities to control pain. Patients who are passive coppers are thought to restrict their movements, avoid certain activities or rest for long periods of time to relieve pain (Jensen et al., 1991; McCracken and Eccleston, 2003). Active coping is considered to be associated with better functioning, while passive coping is associated with poor functioning (Jensen et al., 1991; Waddell and Burton, 2005).

Studies of coping with pain have not clarified which types of coping responses, from a list of many, are not generally considered to be helpful (Jensen et al., 1991; McCracken and Eccleston, 2003). As the success of any particular coping strategy is dependent upon its behavioural context, it would be difficult to conclude, from the published studies, which coping strategies are likely to promote health and functioning. Perhaps this is because most results tend to focus on behaviour such as; rest, excessive passivity (Brown and Nicassio, 1987; Jensen et al., 1991) and catastrophizing about pain (Turner et al., 2000). Geisser and Roth, (1998) and Peters et al., (2005) have argued that reducing unhelpful coping strategies should be the main focus of treatment, rather than increasing potentially helpful coping strategies.

Most studies use the Coping Strategies Questionnaire (CSQ), or inventories similar to it (McCracken and Eccleston, 2003; Peters et al., 2005). A limitation of this approach is that it relies heavily on cognitive responses. Emphasis on responses that are only observable by the individual pain sufferer may not be considered robust enough for research and clinical practice. Perhaps this is because it distances the respondent from the context of overt behaviour, where most significant daily life activity is occurring and significantly limits assessment methods (Peters et al., 2005).

Jackson (2000) described the experience of pain as a struggle to master, overcome or in other ways, succeed against adversity. In this context, it can be noted that the Greek root of the word "cope" is to strike a blow (Merriam-Webster Dictionary, 2002). This spirit of struggling to alter an aversive event (such as back pain) or one's reaction to an aversive event is a dominant theme in the literature regarding coping with pain. For example, Aldrich et al., (2000) have concluded that some pain sufferers can be
characterised by the extent to which they persevere with attempts at controlling a fundamentally uncontrollable experience through analgesia. McCracken et al., (1998) suggested that such attempts to control pain might be considered within a behavioural frame as forms of avoidance. Other studies (Goldstein et al., 2002; McCracken and Eccleston 2003) have suggested that repeated frustrating and damaging attempts to control private aversive events, like back pain, can lead to exacerbated disability and further injurious behaviour. Epidemiological studies also demonstrated differences in perceiving or reporting back pain between countries and cultures (Raspe et al., 2004). The current study included an investigation of how people report and cope with their LBP in Gaza and the possible factors influencing coping strategies.

7.3 Method

The researcher considered that phenomenological approach was appropriate to investigate the experiences of patients with LBP in the Gaza Strip. Investigation of experiences of patients sought to provide this research project with insights into the different dimensions of LBP impacted on its progress in relation to its management in the Gaza Strip. To achieve this purpose, phenomenological interpretative approach was used in this study. This approach aimed for understanding the progress of LBP in relation to its management, rather than explanation of this phenomenon. The selection of this approach allowed the researcher to utilize the knowledge embedded in experience from a study conducted in a semi-controlled setting.

The data of phenomenological research are the lived experienced of the people under study. Phenomenological researchers commonly use individual interviews as the best form of generating data. Kvale (2007) argues that phenomenological data can be obtained from other sources such as diaries and focus group interviews. Focus groups have advantages over one-to-one interviews. They provide a way of collecting data relatively quickly from a number of research participants. Focus group discussions appear to be more naturalistic than individual interviews as they are closer to everyday conversation. More importantly, focus group discussions include a range of communicative processes such as storytelling, joking, arguing, boasting, teasing, persuasion, challenge and disagreement. All these communicative processes will
contribute to explore the troubles face patients during their journey with the problem of LBP. Focus group interviews allow the researcher to explore unanticipated issues and encourage interaction among participants. In a group setting, participants provide checks and balances, thus minimising false or extreme views. In this study, focus group interviews were the chosen method of data collection because it enables individual members of a group to interact with each other, and eventually lead the discussion, thus enhancing the breadth and depth of data produced. It was anticipated that contextual and structural issues related to the objectives of the study would be illuminated through identification of predominant or important themes within participants' responses, thus increasing understanding of the issues faced by patients with LBP.

7.3.1 Selection of participants

One group of six female and one group of five male patients with LBP participated in the study. Participants were purposively recruited from different regions of the Gaza Strip. The head physiotherapists in the five districts of the Gaza Strip provided the researcher with lists of patients with LBP, from which he selected one representative from each region (see Table 7.1 for details). The selected patients were first contacted and asked to take part in this study by the head physiotherapist in each district. Patients who agreed in principle to participate in the study had been provided with an information sheet and consent form by the head physiotherapists prior to participation in the study. The patients responded (with their consent form) to the researcher. Following recruitment, the researcher telephoned participants to arrange a convenient date and time for the focus group to take place.
Table 7.1: Description of demographic characteristics of participants

<table>
<thead>
<tr>
<th>Female Group</th>
<th>Male Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant</td>
<td>Age</td>
</tr>
<tr>
<td>1</td>
<td>39</td>
</tr>
<tr>
<td>2</td>
<td>39</td>
</tr>
<tr>
<td>3</td>
<td>50</td>
</tr>
<tr>
<td>4</td>
<td>46</td>
</tr>
<tr>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>6</td>
<td>40</td>
</tr>
</tbody>
</table>

7.3.1.1 Inclusion criteria

To be eligible for inclusion in the study, participants needed to meet the following criteria:

- Eighteen years of age or older.
- Suffering from acute or chronic LBP as diagnosed by doctors.
- Currently receiving physiotherapy for LBP or have recently finished a course of physiotherapy (maximum four weeks ago).

Participants were informed of their right to withdraw from the study at any time and for any reason without having to provide explanation.

7.4 Ethics and confidentiality

Ethical approval for this study was obtained from the School of Health Professions School Ethics Panel at the University of Brighton (Appendix 3) and the Palestinian Ministry of Health, the Physical Therapy and Rehabilitation Directorate, Gaza Strip (Appendix 1). Participants were identified in transcripts by codes, with personal details known only to the researcher. Data files containing personal information were saved in a separate file from focus group transcripts and secured by a password. Hard copies of data were stored in locked cabinets accessible only to the researcher.
7.5 **Focus group topics and questions**

This study sought to investigate the experiences of patients about the progress and management of LBP. Focus group semi-structured interviews were conducted with participants, who were asked questions around their pain experience, and perceived barriers and facilitators in managing LBP. Topics for the focus groups were chosen specifically to meet the objectives of this part of the research. They were derived from experiences of patients highlighted in the literature and the anticipated influences of the progress of LBP and its management of patients. Questions were directed to elicit information on the development of LBP, its progress, treatments, outcome and the impact of the problem on participants' lives. Questions were designed to encourage participants to present their own experience of the possible causes, effective treatment and participants' evaluation of the influence of social life and culture on the progress of their symptoms. Questions were open-ended and the first question aimed to encourage every participant to tell her/his story and journey with the problem of LBP. The schedule of questions was developed by Expert Panel of physiotherapy teachers from the Faculty of Health Professions / University of Brighton. It was followed by the researcher, who was assisted by a facilitator of the same gender as the group. During the discussions, participants were frequently asked to focus on the questions prepared by the researcher and to answer questions raised by participants. Both focus groups were recorded and data were transcribed verbatim. The following questions were asked and the schedule of questions used in the focus group is presented in Appendix 22.

1. You all have experienced low back pain. Would everyone tell us when and how has the problem started, developed and what treatments have you received?
2. How did you feel when you first developed low back pain?
3. What is your evaluation to the way the problem managed?
4. What did you expect from physiotherapy and from physiotherapists?
5. How has your life been affected by your low back pain?
6. How do you cope with the problem?
7.6 Pilot study

A pilot study was conducted to improve the interview skills of the researcher and his facilitators of the data collection process and to assess the effectiveness of questions of the interview schedule. It provided the researcher and facilitators with an opportunity to develop their interview skills, thus reducing the potential for bias and enhancing data quality. One male and one female focus group (four participants in each group) were used in the pilot study. Participants of the pilot study were selected, received information sheet and signed a consent form as described in Sections 7.3.1 and 7.3.1.1. Each pilot study focus group took place in the conference room at Al-Azhar University and lasted for two hours. Focus groups were tape-recorded, conducted by the researcher and facilitated by a same gender person for each group. The group and the facilitator were asked for feedback following each discussion.

Participants were eager to share their experiences in the pilot focus groups; these emerged as rich descriptions of their feelings, beliefs about management and the impact of the problem on the different aspects of their life. The feedback given by both groups and facilitators was positive and no amendments were made to the conduct of the focus groups. It is speculated that no amendments were needed, due to the experience gained by researcher and facilitators in the earlier physiotherapists' focus groups. Data obtained from the pilot study were transcribed and analysed by the researcher to improve his research skills but they had not been included in this study. Because of the lack of experience of the researcher in qualitative data analysis, he considered transcription and analysis of the pilot study data as training process, not a part of data of the study.

7.7 Data collection

As in the pilot study, each participant signed a consent form prior to the interview and discussions were audio-taped recorded. Demographic characteristics of patients were obtained prior to commencing the focus groups. Two focus groups were conducted by the researcher, assisted by a facilitator of a same gender of each group. The interviews took place in the conference room at Al-Azhar University in Gaza. There was a period
of two weeks between the first and second focus group. Questions were asked by the researcher, while the facilitator helped the discussion to flow spontaneously. The facilitator also helped organization of the discussion and provided feedback to the researcher about arrangement and conduct of the interviews and the participants' responses to topics discussed. The topics addressed were prepared to enable the researcher to explore the participants' experience of the different issues surrounding living with back pain. Questions of the interview were arranged to encourage participants to present these experiences. Prompting and probing questions were incorporating into the discussion, depending on responses to prepared questions. They were used to encourage participants to give more information and to encourage a speaker to give precise answers. Participants were asked to talk about their experiences of their journey with LBP. Each focus group discussion lasted about two hours, coming to a natural stop when the researcher felt the questions had been answered and that topic saturation had been achieved.

7.8 Data analysis

The phenomenological qualitative study presents how participants interpret their experiences and the task of the researcher is to capture this process of interpretation. In order to grasp the meaning of a participant's response, the researcher attempts to see things from that participant's point of view (Boyatzis, 1998).

Focus group discussions were transcribed verbatim and thematic analysis of the transcripts data was carried out to explore key themes. The thematic analysis was conducted using the sequential process of encoding data suggested by Boyatzis (1998), Gallagher and MacLachlan (2001) and Silverman (2005). Analysis of findings of the current study was carried out using the method used in the previous study reported in Chapter Six of this thesis. Please see Section 6.8 and Figure 6.1.

As defined by Boyatzis (1998), a theme is a pattern found in the information that at minimum describes and organizes possible observations and at maximum interprets aspects of the phenomenon. A theme is a pattern found in the information that facilitates an interpretation and it was chosen as the analytic framework because it
enabled a description of the phenomenon of the impact of LBP from the participants own words.

As described in Section 6.8 of this thesis, following the approach used by Gallagher and MacLachlan (2001), a cut and paste method was employed to view the focus group data as a whole. The data were frequently revisited in light of newly identified themes that emerged during data collection and analysis in order to combine similar findings. Conceptual saturation was reached when no new categories were generated (Kendall, 1998; Silverman, 2005), and focus group text contributing to each theme was used to compile data for themes identified. This process entailed the identification of categories in the data. Table 7.2 shows a sample of identifying categories in the transcripts (details are in Appendix 23), the classification of these patterns which are then interpreted, named and described as a theme (see Table 7.3).

Table 7.2: Identifying categories in the transcripts

<table>
<thead>
<tr>
<th>Category</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>At the beginning, it was severe (F6)</td>
<td>Onset</td>
</tr>
<tr>
<td>We need realistic information (M2)</td>
<td>Patient need</td>
</tr>
<tr>
<td>Physiotherapy did not help me (F1)</td>
<td>Effect</td>
</tr>
<tr>
<td>My feeling was that I lived in an emergency and I expected my physiotherapist to consider this ..... but it was not like that (M4).</td>
<td>Disappointment</td>
</tr>
</tbody>
</table>

7.9 Rigour

The presentation of a qualitative study should provide sufficient detail about procedures to enable the reader to establish an audit trail to assess the rigour of the findings (Denzin and Lincoln, 2005). Qualitative researchers use the term "trustworthiness" to demonstrate rigour. Several steps were undertaken to support trustworthiness in this study. Pilot testing, post-focus group sessions with facilitators, transcript data by independent physiotherapists and participants' checks which conformed that transcripts were an accurate representation of what was said during the discussion enhanced data reliability. Transcripts were translated from Arabic into English language by an experienced translator, who is also a physiotherapist, using a
recognised back-translation method, to confirm the meanings and overtones of the transcript (Oppenheim, 1992). In addition, the inclusion of tables (see Appendix 23) that illustrate how the themes were developed from the raw data demonstrates rigour (see Tables 7.2 and 7.3). The thematic analysis in this study was conducted initially by the researcher and then confirmed independently by one other experienced researcher. Sufficient raw data has been presented in this study to enable readers to judge the procedure and the findings and assess its applicability to other settings.

7.10 Findings

After in-depth reading and re-reading of the transcripts, the researcher identified the patterns that described the progress and impact of LBP in relation to its management in the Gaza Strip. These patterns were organised and classified into four themes (see Table 7.3). Different opinions emerged in relation to these themes and data analysis demonstrated that experiences cited from a complex network of thoughts cannot be considered in isolation but should be seen as holistic experiences of focus groups as suggested by LoBiondo-Wood and Haber (2002). These themes are presented in order of the participants' journey with the problem of LBP, since its onset until the time of conduction of this study. The italicised sentences are quotes from participants and F refers to female participant and M refers to male participant while Fs or Ms refers to many participants in the group.
Table 7.3: Summary of themes and categories

<table>
<thead>
<tr>
<th>Themes</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Description of the low back disorder</td>
<td>• Onset and progress of symptoms</td>
</tr>
<tr>
<td></td>
<td>• Perceived beliefs about LBP</td>
</tr>
<tr>
<td></td>
<td>• Possible causes and aggravating factors of LBP</td>
</tr>
<tr>
<td>2) Management process</td>
<td>• Diagnosis and assessments</td>
</tr>
<tr>
<td></td>
<td>• Medical and surgical interventions</td>
</tr>
<tr>
<td></td>
<td>• Physiotherapy practice</td>
</tr>
<tr>
<td></td>
<td>• Coping tasks</td>
</tr>
<tr>
<td></td>
<td>• Acceptance</td>
</tr>
<tr>
<td>3) Impact of LBP on patients' lives</td>
<td>• Physical effects</td>
</tr>
<tr>
<td></td>
<td>• Psychological influences</td>
</tr>
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7.10.1 Description of the low back disorder

The study participants' descriptions of onset and progress of their condition focused on the limitation of physical activities that associated with their condition. It was clear that severity of pain and associated limitation of physical activities as well as doctor's advice impacted on participants' beliefs about the origin of pain and physical activities that would initiate their pain. One female participant (mother) could not lift her son (10 month age) as she used to do, and had avoided bending her back:

*My doctors advised me not to carry heavy objects, I could not carry my son (10 months age). This is an example ...... . Not just that – all activities which need bending the back (F5).*
The participants' thoughts about possible causes and aggravating factors of their pain emerged during their descriptions of their low back disorder. Categories contributing to this theme emerged as onset and progress of symptoms and possible causes and aggravating factors of LBP.

### 7.10.1.1 The onset and progress of symptoms

Participants' experience about the start of their pain was not uniform. Seven patients (3 women and 4 men) described the onset of their pain as severe while 4 participants said that it started as mild pain:

- *My back pain started since six months ago. At the beginning, it was severe but now it is mild and I can cope with it* (M5).
- *At the beginning, my pain was severe and I got so worried* (M3).
- *At the onset, I could not get off the bed. Pain was in my back, thigh and leg. I thought my back was broken* (F2).
- *At the beginning, it was severe* (F6).
- *It was mild and recurrent; became very severe* (F4).
- *At the onset of my pain, I could not do my prayer* (M4).

The persistence and distribution of pain varied between participants. Participants expressed their pain in terms of changes in duration and severity:

- *At the beginning, I felt pain in my leg, then pain moved to my thigh, it was severe* (F1).
- *It was in the lower area of back and gradually extended up to cover my back* (M1).
- *My pain is recurrent, sometimes good, sometimes bad* .... (M3).

### 7.10.1.2 Perceived beliefs about low back pain

The participants' descriptions of onset, progress and searching for treatment demonstrated a case of uncertainty and anxiety which impacted on their physical activities and psychosocial construct:
We have experienced a period of uncertainty and fears. We have concerns and fears about everything; possibility to work, not to work, to live normal life or not .... ? (M5).

They perceived their pain as a dangerous pathological change:

I had a feeling that a dangerous change occurred in my back which would never recover. My pain was severe and intolerable (F2).

Many participants found that one of the impacts of LBP was related to their confusion and lack of information at onset of their condition. They highlighted their disconcerting feelings derived from uncertainty they experienced. They also were confused about what happened to their backs and how dangerous back pain was. This was expressed as the belief that serious changes took place in the structure of the back, with the following quotes being typical of responses:

We have experienced difficult times of back pain, uncertainty and fears (M5).
I had a feeling that a dangerous change occurred in my back which would never recover (F2).

The discussions demonstrated that women and men participants experienced worries and anxiety which depended on their understanding of what was going on to produce the pain. Men developed positive beliefs about their pain and activities while women remained with their concerns and fears:

Now I believe that back pain is not dangerous and I live normal life (M4).
I can live a normal life with my back pain. At the onset of my back pain I was afraid of pain and disability. I wish I had a job to do (M3).
I ignore it. I think this is a fashion in Gaza. All people in Gaza have prolapsed discs! (M1). No, back pain is not disabling condition (M1).
I do not know if the problem is still dangerous or not? (F1).
I am still worried. Many of my house duties are now done by my children. I believe LBP is difficult (F4).

These differences could be understood as responses of participants to different advice and education given to participants during their treatment programme.
7.10.1.3 Possible causes and aggravating factors of low back pain

This pattern emerged throughout the descriptions of participants' journeys with the problem of LBP. Participants talked about possible causes of their LBP. They thought that heavy work was a possible cause of their pain:

*I do heavy work in buildings. My tasks are heavy ones (M1).*

During their discussion of the factors that would initiate or increase their pain, participants expressed a need for vigilance and fear of physical activities. They pay extra attention to what they were doing and how they were moving that could be understood in terms of anticipated causes and aggravating factors of LBP. They briefly mentioned these factors in terms of physical activities:

*Carrying heavy objects (M5).*
*Walking for long distance may initiate LBP (M4).*
*Carrying heavy objects, walking and sleeping (F1).*
*Working while standing (F3).*
*Doing our work continuously (F5).*
*All physical activities would increase my back pain (F5).*
*Carrying heavy objects (F4).*
*All activities which need bending the back (F5).*

Participants tended to address association between psychological and social status and LBP. They expressed this in their own words:

*My pain started when I was staying at home after the death of my son (F4).*
*I think this is psychological (F2).*
*This is absolutely true. We believe that there is a relationship between LBP and psychological issues (M1).*
*I think bad psychological status might initiate back pain (M3).*

7.10.2 Management process

Discussion about management of LBP in Gaza demonstrated that participants were generally dissatisfied with the treatments' effect on their pain and improved levels of
function. Most participants expressed their disappointment of the way by which their condition was managed. They argued that there were differences between the public and private sectors in terms of assessment and treatment of their condition:

*In private clinics, doctors examine their patients carefully, but in the UNRWA and governmental clinics, they do not care. They just ask questions and prescribe drugs (F3).*

*I am not satisfied that doctors and physiotherapists provide enough care (M3).*

*Doctors and physiotherapists do not consider our feelings and our needs. I expected better care (M1).*

The discussions highlighted perceived professional deficiencies and poor application of management skills in both the medical and physiotherapy practices. Patterns contributing to this theme are diagnosis and assessments, medical and surgical interventions and physiotherapy practice.

### 7.10.2.1 Diagnosis and assessments

Many participants were told that they had prolapsed disc, particularly between L4 and L5. This diagnosis impacted on patients' feeling in terms of fears, uncertainty and an increased healthcare utilisation:

*Disc prolapsed is dangerous. If I had a prolapsed disc, I would never improved (M2).*

*When my doctor told me that it was not a prolapsed disc but just muscle tension, I felt better and I have not much concerns about my condition (F3).*

*If I have been told this (not prolapsed disc), I would not seek treatment (F5).*

Assessment of LBP emerged throughout the discussions as a vital part of the management process. Most of the participants found that one of the biggest challenges of management of LBP was related to its assessment. One participant expressed this as surprising:

*Treatment without assessment! (M2).*
A sense of disappointment of LBP assessment in Gaza emerged as a consequence of uncertainty. Participants spoke frequently about a lack of information given by doctors and physiotherapists and their responses implied a desire for more information about their condition. It was apparent from some of the responses that patients had questions about their condition that had not been answered by doctors or physiotherapists. This had impacted upon patients' abilities to predict what actions would increase the pain and how would the condition progress:

*They did not provide me with any explanation (M3).*

*Doctors did not give me information about my condition. Information about how dangerous my condition might be, and what would be the effect of my treatments. Physiotherapists also did not talk to us (F6).*

*They did not listen to us (M1).*

*We depend on recommendation and advice provided by our doctors. They did not give us enough information (F3).*

Confirmed diagnosis and detailed medical and physiotherapy assessments as well as open communication between the patient and the treating doctor or physiotherapist were perceived to be very important for the management process of LBP.

### 7.10.2.2 Medical and surgical interventions

Participants argued that their primary health care doctors did not examine them properly and did not give them information about their condition. They described the medical treatment as provision of pain killers and referral to physiotherapy:

*My doctors gave me pain killers and a referral for six sessions of physiotherapy (M5).*

*Doctors gave me some medicine and I improved (M2).*

Some patients said that they were receiving medicine and physiotherapy at the same time:

*Now I am under medication and physiotherapy (F1).*

*I use pain killers and physiotherapy (M3).*
Although none of the participants had back surgery before the interviews, it emerged as an anticipated procedure of management of LBP. Many participants were told by their doctors that they might need back surgery as alternative intervention. The participants’ opinion was affected by stories and lay knowledge. The overall impression of the discussion indicated that the majority of patients do not agree for back surgery in Gaza:

\[
\begin{align*}
I & \text{ would not agree for surgery (M5)} \\
\text{Back pain is not easy job to be done in Gaza (M4).} \\
I & \text{would not agree for surgery. My father has done it and still has LBP (F4).} \\
\text{He decided not to have surgery at all (story); now he is doing well (F3).}
\end{align*}
\]

The focus of the interviews was the physiotherapy practice. Medical and surgical treatments were not the core of the discussion. However, these findings should be considered because without doctor's referral, a patient with LBP would not receive physiotherapy in Gaza.

### 7.10.2.3 Physiotherapy practice

The most striking pattern that emerged was the participants' evaluation of physiotherapy delivery and outcome. Participants provided descriptions for physiotherapy practice, modalities of physiotherapy and physiotherapists. Some participants had no previous idea about physiotherapy and most participants did not find what they expected:

\[
\begin{align*}
I & \text{thought that physiotherapy would solve my problem completely (M1).} \\
I & \text{did not expect physiotherapy as just hot packs (F1).}
\end{align*}
\]

Some participants showed -to some extent- a general satisfaction with the effect of physiotherapy on their condition:

\[
\begin{align*}
I & \text{have received six sessions of physiotherapy, I feel better (M1).} \\
\text{Physiotherapy is not bad. With physiotherapy I feel progress (F4).} \\
I & \text{do progress; physiotherapy is better than drugs (F6).} \\
\text{Physiotherapy is helpful (F3).}
\end{align*}
\]
There was general agreement that massage, hot packs and exercises were useful in management of LBP:

- Massage is useful if applied carefully (M2).
- I agree that massage is useful (M4).
- Hot packs and exercise are useful (F2).
- I found that exercises are useful (F5).

A bad image of Palestinian physiotherapists was emerged when the participants described the relationship between the effect of physiotherapy and the performance of physiotherapists. These findings illustrated poor physiotherapists' performance and patients' disappointment in management of LBP in the Gaza Strip:

- Physiotherapy is useful but physiotherapists do not care (F5).
- Physiotherapy is useful but physiotherapists did not practice it as it should be. We need physiotherapists able to assess and treat us (M1).
- They provided us with hot packs and taught us some exercise (F6). This what happened with us (F6).
- My feeling was that I lived in an emergency and I expected my physiotherapist to consider this ..... but it was not like that (M4).
- We need physiotherapists to follow us and teach us the exercise (M5).

This process of managing or talking about management of LBP affected the beliefs about and the way the participants dealt with their pain and physical activities. Participants developed beliefs and expectations and demonstrated practical tasks they used to overcome their pain that could be understood in terms of accommodative coping functions.

7.10.2.4 Coping tasks

Many participants described coping tasks that contributed to their pain relief. These tasks emerged as ways that they had discovered to deal with their pain:

- I discovered that normal prayer in standing could relieve backache (M1).
- I use some cream and massage. I feel walking relieves my pain (F4).
- I have hot packs at home and used to use them when I got pain (F5).
Sometimes I use a bandage around my leg. This decreases my pain (F1).

The study male participants' experience of the pain had not only developed treatment tasks but also participants' belief that pain diminished or increased independently of what they did:

I managed to cope with my pain. I ignore it (M1).

This may indicate that women participants were affected by LBP more than men participants.

7.10.2.5 Acceptance

The feeling of acceptance emerged throughout the discussion, particularly when some participants told stories of other people who had suffered LBP:

My neighbour went to the hospital for an operation... but he cancelled it because he was afraid... now he is doing well and no complaints (F3).

The reliance and state of dependency on God for management of LBP were illustrated in the participants' recommendation. The participants' relation with God was associated with optimism and hopefulness that can be understood in terms of acceptance:

Rely on God. Relying on God may keep us optimistic (F4).
We believed in God (F5).

7.10.3 The impact of low back pain on patients' lives

The impact of LBP was described as a combination of influences on participants' lives. This occurred in various contexts ranging from physical restrictions to the effects on participants' financial status. Some categories contributing to this theme reported differences between men and women.
7.10.3.1 Physical effects

Limitations of physical activities at the onset of LBP were very clear in all participants. Participants described a variety of physical limitations that impacted on their work and daily activities (see Section 7.10.1.1). Female participants described limitations to their physical activities and tended to continue limiting their normal physical activities while male participants developed positive feelings towards their physical activities:

- *I cannot walk well, I limp* (F1).
- *I felt disability* (F3).
- *Back pain is not dangerous. I can live a normal life with my back pain* (M3).
- *Honesty, as long as I have work, I do not feel back pain* (M1).

7.10.3.2 Psychological influences

The psychological impact appeared to emerge as a consequence of the severe onset of pain and the poor management process experienced by participants of this study. It contributed to the development of the participants' feelings towards their condition. The fear of pain, its origin and possible disability and lack of information given by health professionals impacted on participants' life and future:

- *Worry about my health and my physical ability to do my job and my duties* (M5).
- *I really worried about the progress and fate of my condition. I was worried about the future* (F1).
- *I had a feeling that a dangerous change occurred in my back which would never recover* (F2).
- *It was a disaster* (F3).
- *I am threatened by recurrent pain* (M5).

7.10.3.3 Social influences

The social impact of LBP was emerged throughout the discussion of both focus groups within the context of the problem. The participants' description of the social
influence emerged from their own experience. For one female participant, the restriction of social activities was greater than the restriction of physical activities itself:

*I feel shy with my limping, I have minimised my social visits. I avoid going outside with my husband (F1).*

Another male participant spoke about his family concerns caused by his back pain:

The social influence was apparent from other responses that participants had economic and family responsibilities in an eastern community as mother's responsibility is to care for children while the father is the breadwinner living in extended families:

*I lost my role in family. People always ask questions (F1).*

*I stayed at home for rest which affected my economy (M4).*

*I my family was worried about the outcome and our future (M5).*

### 7.10.3.4 Economic issues

The current economic situation in Gaza was described by many participants as posing a barrier to accessing health services:

*Because of my work and my economic difficulties, I did not seek treatments (M1).*

*Surgery also costs money (M3).*

*I stopped physiotherapy after four sessions and continued using hot packs and doing exercises at home. I saved the cost of transportation (F5).*

Male participants described the challenge of low back pain related to their economic difficulties:

*I do not feel my back pain during working. I know many people with disc prolapsed and they are working .... (M1).*
7.10.4 Patient needs

This theme could be regarded as a consequence of the needs required to manage LBP in the Gaza Strip. Participants highlighted their need to communicate with their health care providers. They also highlighted their need for better health care in terms of assessment and treatment in medical and physiotherapy practices.

7.10.4.1 The need to communicate

Participants indicated that neither doctors nor physiotherapists gave answers to their questions which might affect their coping abilities:

\textit{We need answers to our questions (Fs).}
\textit{They did not provide me with any explanation (M3).}

7.10.4.2 The need for effective physiotherapy

Participants also spoke highly about professional deficiencies in physiotherapy management of their condition:

\textit{Physiotherapy is nothing (M5).}
\textit{I only received hot packs (M2).}

These findings provide the evidence that there was a gap between what patients with LBP in Gaza needed and what they received.

7.11 Summary of findings

Findings of this study showed that the study participants were not uniform in their descriptions of their journey with low back disorder and that the extent to which the condition impacted on their functional activities, social, economic and psychological status varied. At the same time, it was clear that participants had experienced difficult times of pain, limited physical activities, uncertainty, fears and anxiety especially at onset of their condition. Their journey with LBP showed that participants faced unexpected health care behaviours which impacted on the management of their
condition. In this environment, participants developed independent beliefs about LBP and coping tasks that enabled them to cope with their condition. Focus group interviews showed differences between women and men in their developed independent beliefs which reflected the social role of both genders in Gaza. Men showed more challenge to LBP disability and less commitment to advice, in terms of restriction of physical activities, given by health professionals than women. These beliefs resulted in more utilisation of health care by women more than men.

7.12 Discussion

This study used a qualitative approach to describe the experiences of patients with LBP and how their management related to these experiences. The four themes that emerged from the focus group discussions that captured the impact of LBP were related to the pain development and consequent lack of control that participants perceived. The themes highlighted a number of perspectives on back pain and factors influencing its management in the Gaza Strip. These experiences described the disorder under study and patients’ beliefs and concerns, expectations and needs and how these issues were managed. Findings of the study demonstrated that patients in Gaza needed information in order to build up accurate beliefs about LBP. Participants expressed great dissatisfaction with health care provided to them throughout their journey with their symptoms. Despite this, findings of this study showed that LBP sufferers in Gaza were less likely than western societies to develop physical disabilities due to LBP. Discussion of the findings is based around the four themes identified, allowing interpretations to be kept within context.

7.12.1 Description of the low back pain disorder

The perception of pain is complex and varies from individual to individual. Pain beliefs refer to patients’ own ideas about their pain and what it means for them. Beliefs about the extent to which pain can be controlled appear to be important for adjustment to pain and the development of incapacity. Research studies have highlighted that the way patients with LBP view their pain influences the progress of symptoms (Ostelo et al., 2003; Houben et al., 2005). Pain beliefs are not simply the
product of the pain experience, they impact on life and how patients access adequate health care. Importantly, beliefs of patients about LBP are influenced by many factors, including culture (Sanders et al., 1992) and social and economic factors (Lee et al., 1989; Volinn, 1989). In addition, beliefs about LBP may differ between individual patients and health care providers. Therefore, hearing how individual patients describe their condition is an important point in planning and implementing treatments.

The findings of this study showed that some participants were surprised at the onset of symptoms. They described their pain as sudden, severe and intolerable. The onset of pain was confusing as participants did not understand the cause and later did not understand the progress of their pain. Epidemiological surveys from different countries give figures for the onset and cause of LBP (e.g. Taylor and Curran, 1985; Mason, 1994), but there is a lack of information about how people perceive their pain and interpret the onset of symptoms. The current study suggested explanations for patient's behaviour at the onset of LBP in terms of their lack of information and worry about their future. This evidence highlights the need for health promotion about pain management in the Gaza Strip.

Whether patients’ beliefs about their pain are accurate or not, these perceptions may affect the patient's behaviour, which can be interpreted through social meanings. Von Korff and Saunders, (1996) and Burton (2005) found that patients with LBP have a number of fears about aetiology of pain, diagnostic expectations, treatment expectations and outcome goals. Many reasons for these fears can be suggested from the literature. For example, Haythornthwaite et al., (1998) found differences in pain perceptions between Canadian people who were responsible for their own health care expenses and had no litigation and those with compensation or litigation. Participants in this study were similar to those Canadians who were responsible for their own health care expenses. They expressed their concerns about damage that might occur and the risk of further damage to their backs as a result of movement. They also expressed concerns about the fear of further injuries being more important than present pain.
At the onset of the problem, participants held the belief that LBP was dangerous while they were struggling to provide financial support for themselves and their families. They were concerned about the impact of the problem on their health and how that might affect their work and financial status. The Canadian study (Haythornthwaite et al., 1998) supports the Gazan findings that patients' beliefs about LBP can be affected by financial concerns and social contexts. People who need to work will change their beliefs about their pain, return to work and recover quicker than those who restrict their activities.

Participants expressed different beliefs after they had experienced LBP for some time, which could indicate that they have gained some control over their pain. They continued working and ignored disabilities that might result from LBP. Gaining control over symptoms of LBP involves mastering the pain and its impact on activities of daily living. This performance depends on the individual's own judgement of his/her capabilities (Affleck et al., 1987). In the Gaza Strip, there is a general feeling that the difficulties of life are due to the political instability and economic situation. In such situations, people may develop beliefs that include taking personal responsibilities to deal with illness (DeGood and Tait, 2001), which may explain why many participants ignored their back pain. These findings suggest that patients with LBP in the Gaza Strip may be less likely to become disabled, as reported by Main and Spanwick, (2000) and Waddell, (2004) in western societies.

It is interesting to note that participants discovered the value of continuing to work with LBP, by chance, because of their financial difficulties. This was contrary to the advice given by doctors and physiotherapists in Gaza. On the other hand, data from the study showed that female participants continued restricting their normal physical activities. This experience could be said to indicate the development of self-efficacy of patients, due to a social demand and highlight the importance of emphasising a good prognosis by health care providers in consultation with patients in order to enhance self-efficacy of patients suffering LBP.
7.12.2 Management of low back pain

Participants, when discussing their experiences of the management of their problem raised issues about their needs, expectations and dissatisfaction with health services. Participants relied on doctors, in particular, and physiotherapists, to some extent, to address their physical and emotional needs. They expressed significant dissatisfaction with medical and physiotherapy assessment and treatment and the negative attitudes and environment they encountered.

Anecdotal evidence indicates that the search for treatment for LBP in the Gaza Strip usually starts by consulting a general practitioner or a consultant, who decides if, and what, treatment is necessary. Participants were worried and confused about the onset of their pain and expected detailed assessment and effective treatment at that point. They requested explanations for their pain and medical diagnosis. Participants stated clearly that their medical management was disappointing, as they received little, or no, advice, assessment and treatment. These medical inadequacies proved to be particularly influential in participants' early experiences since they appeared to increase the fear accompanying the sudden onset of pain. These findings are in line with Marquie et al., (2003) and Perreault and Dionne (2005) findings that health professionals’ perceptions of patient’s pain experience may not match patients’ own perceptions.

Knowledge of diagnosis and consequences of the problem of LBP seemed to be important for changing participants’ behaviour and coping with their symptoms. Participants stated that they did not receive enough information about their pain, either from doctors or physiotherapists, and most of them were diagnosed as disc lesions. The majority of participants of the current study (both males and females) believed that disc lesions were dangerous and required surgical intervention. During the discussion they showed a lack of confidence with their diagnosis, due to limited assessment, and they effectively ignored the diagnosis. Furthermore, participants were disappointed with physiotherapy to the extent that some of them described it as nothing and not worth the cost and effort of attending the clinic.
Other social and clinical research suggested that, in environments, such as Gaza, LBP can be frightening and there is significant possibility for transition from acute to chronic LBP and disability (Polatin et al., 1993; Crombez et al., 1999; Buer and Linton, 2002; Frost et al., 2004). However, findings from this study showed a different picture to that presented by patients in western countries. In Gaza most participants, especially males, described their problem as pain that can be relieved by short periods of rest, but does not limit normal daily activities. It can be argued that daily difficulties in Gaza have led to an acceptance of their LBP but the economic necessity of providing for their family has meant that they have to remain at work. Moreover, it seemed that self-efficacy beliefs of participants resulted in a perceived lack of control and passivity towards management of their condition. Alongside this, they were not really satisfied with their management and felt that nothing could be done by health care providers so had no option but to continue with normal working life.

It is important to note that this theme was the main theme to be emerged from the focus group discussions which emphasises that people in Gaza believe that LBP is due to pathological effect that can be treated. Similar western studies revealed that "loss" - such as socio-economic losses - was the major theme to be emerged (Walker et al. 1999; Walker et al. 2006). This may suggest that western people have better awareness about the different dimensions and management of LBP than Gazan population. This highlights the importance of health education and health promotion programmes for patients with LBP in the Gaza Strip.

7.12.3 The impact of low back pain on patients' lives

For some of the participants, the impact of LBP was evident from the first episode of pain. Participants described their inability to interpret from initial pain what their expectations of the progress and management of LBP would be. Judging by feelings developed at the beginning of the problem, it seems that people with LBP, in Gaza, were concerned about their future life and they expected treatment that would lead to a cure of their condition. Although it is unrealistic for those who have LBP to expect a speedy recovery, better doctor-patient communication would help reduce confusion
about prognosis and encourage more realistic expectations of the management of the problem.

In line with the literature (e.g. Waddell, 2004; Krismer and van Tulder, 2007), findings from this study showed that LBP impacted on the physical, psychological, social and economic situation of participants. Although both men and women highlighted the influence that LBP had on their daily physical activities and work, the female group showed more restriction of physical activities and work than the male group. This difference can be explained in terms of the different social roles of men and women in Gaza for work and family responsibilities. Women mainly work inside the home and can pace themselves by taking short rests in between periods of physical activity and often share housework amongst all the women in the extended family. Men work in different settings outside the home, on an individual basis for financial gain, working against deadlines outside their control and may need to maintain their level of physical activity for longer periods of time, without the opportunity to take rest periods. These gender differences could suggest that LBP does not necessarily relate to physical pathology and its symptoms can be influenced by social and economic factors.

All participants experienced negative feelings in terms of fear and anxiety at the onset of the problem. Changes in these feelings were particularly seen in the male group who felt that they had no option but to continue working, even if they had a dangerous condition while women continued to hold negative attitudes and anxiety about their pain. These findings reflect the evidence that LBP can be challenged by staying active (Hadler, 1999; Ehrlich, 2003). Male participants were enforced by financial responsibilities to continue working. In the focus group, these males indicated that working helped them believe that their condition was not dangerous and how to cope with pain during working. This evidence supports the literature that LBP can be challenged by staying active (Hadler, 1999; Ehrlich, 2003).

Some participants, in particular women, experienced personality changes resulting from the attitudes of, and interactions with others. They felt less confident and less able to socialise than before they developed LBP. This observation reflects the longstanding view that the self is constructed from our observation and interpretation
of the responses we receive from others, which can lead to distortions of personality when these responses are viewed as negative (Allport, 1997). Similarly, the attitudes of others can cause discomfort and self-consciousness (Gallagher and MacLachlan, 2001). Such self-consciousness was reflected particularly in the discussions around the influence of the family and neighbours on the female participants, as people in Gaza live in extended families and socialise closely with neighbours.

7.12.4 Patient needs

Participants in this study pointed out some issues that they needed in the management of their condition. They defined communication as an important element in the management of their symptoms. Open communication with treating health care professionals was considered as an alleviating factor to their anxiety and stress and an important factor to help them to cope with their symptoms, which at the beginning was perceived as very difficult and as kind of a disaster. Research shows differences in the efficacy of information and or education-based interventions in the management of LBP (Lahad et al. 1994; Leciaire et al. 1996). However, the education-based interventions place emphasis on knowledge about a wide variety of topics, rather than focusing on key areas of importance to patients. Participants in this study articulated a clear understanding of the aggravating factors in their low back disorder.

In this circumstance, it would be not surprising that the participants were dissatisfied with the management of their condition. Glenton (2003) found the clinical uncertainty surrounding the diagnosis of back pain leads to compounded suffering and redefining physical problems as psychological ones. Rhodes et al., (1999) drew attention to the complex inter-relationship between the biomedical paradigms need to diagnose visible pathology and the private experience of pain. Because precise diagnosis of the cause is beyond medicine's current capabilities, many people with back pain feel marginalised and report feeling as if others perceive their reports as untrustworthy or fallacious. Rhodes et al., (1999) suggest that there is a strong cultural reliance on seeing into the body as central to confirm and normalise patients' symptoms. This was the case for participants in this study who suggested that the impact of physical
symptoms of low back disorder were compounded by a lack of knowledge, a need for clinical assessment and poor health care paradigms.

7.13 Conclusion

This part of the research has fulfilled the objective as set out in Sections 7.1 and 7.3. The focus groups investigated the needs of patients with LBP, their expectations and satisfaction with health care they received. The findings demonstrated a gap between the needs of patients and treatments provided. It seems that lack of communication between health care providers and patients has complicated the therapeutic process and led patients to depend on their own personalised ways and behaviour to live with their pain. Participants expressed their unhappiness at the lack of information and high levels of dissatisfaction with both medical and physiotherapy treatments. The impact of LBP of these Gazan participants was less than anticipated, possibly because of lack of support from health care providers and the political and economic situation in which they had to live.

The study highlighted professional deficiencies which need to be addressed in health education and health policy in the Gaza Strip and can be a good source for further research. The final chapter in this thesis will pick up these topics and attempt to offer some solutions.
Chapter Eight

Discussion

8.1 Introduction

This research project had five aims reported in the preface of this document, page iv. Four studies were conducted to achieve these aims. The first study investigated the prevalence rates of LBP and its related risk factors in the Gaza Strip. The second study investigated the attitudes, beliefs and recommendations of Palestinian physiotherapists in Gaza about LBP and its management. The third study determined the current physiotherapy provided for patients with LBP and the views of the physiotherapists about this process. It also investigated the physiotherapists' view about the factors that might influence their physiotherapeutic process. The final study investigated the experience of patients gained during their journey with LBP and its physiotherapy management in Gaza. Findings of these studies provided a holistic picture about the problem of LBP and its physiotherapy management in the Gaza Strip. They provided basic statistics for clinical and administrative purposes for the first time in Gaza. They also determined current physiotherapy provision and the perspectives of Palestinian physiotherapists and patients on the physiotherapeutic process of LBP and its outcome. The factors that might facilitate or hinder effective physiotherapy for patients with LBP in the Gaza Strip were also explored. Having acknowledged the literature on the prevalence of LBP and the development of new approaches and methods of physiotherapy for management of LBP, this work paved the way for research and clinical development. The achievement of each aim of the study has contributed to a new knowledge and the integration of findings of the study has provided rich insights into physiotherapy profession and management of LBP in the Gaza Strip. This chapter considers the integrated work of the four studies reported in Chapters 4 to 7 of this thesis. The term "this study or current study" in this chapter refers to the integrated work of these four studies.
The organisation of this chapter reflects the aims of the current study. As thus, this chapter consists of two sections. The first section considers the findings of the current study, the implications of clinical practice and directions for further research in the area, as discussed in chapters 4 to 7. The second section considers the methodology used in the current study to gather the information needed, as discussed in Chapter 3. Data from the current study are used to highlight and inform the discussion in each section.

8.2 Key findings of the current study

The key findings of this study were:

- The prevalence rates and risk factors of low back pain in the Gaza Strip.
- Current physiotherapy provided for patients with low back pain and views of physiotherapists and patients about it.
- Factors influencing delivery and outcome of physiotherapy provided for patients with low back pain.

This section overviews these findings. The following component section includes a discussion on prevalence rates and risk factors of the condition, clinical implications and recommendations for future research and for current physiotherapy management.

8.2.1 The prevalence rates of low back pain

The findings of the current study indicated that 28% of the population aged 18 years and over experienced LBP at least one day during the year prior to the conduct of the study. Of them, 12% had the problem for the first time during that year and 15% had LBP on the day of the interview. The findings also showed that 27% of LBP sufferers did not seek health care and 40% had received physiotherapy. As demonstrated in Chapter Four, these findings showed some similarities and differences between the Gaza Strip and western countries. Similarities were found in the occurrence and recurrences of the problem. Differences were found in the development of disability due to LBP and prevalence rates between women and men in some age-groups.
Many international epidemiological studies show that 12-33% of people report some back symptoms on the day of interview, 19-43% report back pain in the last month, 27-65% in the last year and 59-84% at some time in their lives (Walker, 2000). Some authors (Walker, 2000; Waddell, 2004) argue that the exact figures seem to depend on the wording of the questions rather than any differences between the people in each study. Data from this study provided figures within the international ranges (see Chapter 4). Following these recommendations, the validity of these results will increase if collected in other parts of Palestine. However, researching the prevalence of LBP in Gaza was necessary to determine the size of the problem and its risk factors. This provided data describing differences and similarities between Gaza and the west and supporting the literature that LBP is a common problem in all societies but its prevalence can be different in different societies.

Differences were found in recurrence of pain and its consequences. Adults in the Gaza Strip seemed to be less likely to develop recurrent and disabling LBP than adults in industrial countries. The belief that chronic LBP would not lead to physical disability may be driven by the way people in Gaza perceived their pain and their social and economic needs and their religious belief that "every disease has a cure" (Khan, 1990).

The epidemiological study conducted in this research project did not seek to ask how many episodes of LBP the participants had experienced. This limitation has not helped the researcher to discuss the comparison of this characteristic of LBP with other studies such as the South Manchester Study reported by Croft et al., (1997) who gave some figures for the frequency of back pain. However, information gained from the patient focus groups (Chapter Seven) showed variation in pain recurrences among participants. This supports results from international studies that recurrence is a characteristic of LBP.

The current study highlighted socio-cultural and economic factors that contributed to differences in findings of prevalence of LBP in the Gaza Strip and other prevalence rates in published literature in western societies. People in Gaza believed that LBP should not lead to permanent disability, and in the absence of a cure by health care providers, there would be a possibility to be cured by God. These beliefs led Gazans
to be optimistic that a cure will be found for their pain. In addition, the economic
difficulties, family responsibilities and costs of health care in Gaza put pressure on
adults to continue working and carrying out their daily activities, despite their pain.
Patients had concerns about the progress of their pain and its impact on their general
health and their ability to practice their social role. With line of the literature from
western societies, the current study, as the first of its kind in Gaza, paves the way for
future research on psychological and social influences on the development and
progress of LBP in Arab, Islamic societies

By contrast, the availability of compensation and health services in western countries
has negatively impacted on pain perception and disability (Main and Spanwick, 2000;
Waddell, 2004). This evidence suggests that LBP is not a dangerous health problem
and socio-cultural variables can play an important role in its management. In general,
the literature (Main and Spanwick, 2000; Waddell, 2004) suggests that medical
intervention is considered more appropriate for acute physical diseases with clearly
understood anatomy and pathology. It is much less successful in dealing with chronic
and poorly understood conditions, particularly if there are psychosomatic features
involved, as in LBP. Most LBP is generally considered to involve a mechanical
disturbance of the musculoskeletal structures or function of the back, rather than due
to disease or injury (Adams et al., 2002). In agreement with this argument, findings
from patient focus groups showed that medical interventions have failed to cure or
prevent recurrences of the condition.

Additionally, there are neurophysiologic and psychological explanations for pain
mechanisms and their consequences. They suggest that pain and disability are not the
same, but are linked through a complex relationship that is influenced by many
factors. Pain is filtered and modulated through the nervous system, the individual’s
previous experience and learning, through physiological status, emotional state and
socio-cultural environment (Turner et al., 2000). Data from this study showed that
people with LBP in Gaza had less recurrent and disabling pain than people in western
societies which support this argument.

In the light of information already mentioned in this section, it is suggested that
culture and social life may influence the progress of LBP symptoms. Findings from
this study showed less recurrent and disabling pain in the population of Gaza than western populations. It can be argued that people in Gaza have less access to resources, such as modern health care and financial support, which may contribute to more self-efficacy and the opportunity to challenge recurrent pain and disability.

These findings suggest that it would be better to prevent people in Gaza developing chronic pain and disability, rather than trying to treat their intractable pain. To do so, health professionals need to learn to communicate with patients and provide better explanations about the nature of LBP and the mechanisms that may contribute to persistent pain and disability. This also highlights the importance of patient education as part of the management of first pain episodes which was recommended by Frost et al., (2004).

8.2.2 Risk factors for low back pain

The findings of the current study suggested that the prevalence of LBP is significantly influenced by age, social class (based on occupation) and marital status. In line with most population surveys (e.g. Mason, 1994; Croft et al., 1997, Croft et al., 1998), the current study showed that the prevalence of LBP increases with age up to 44 years and reduces gradually from that age. Adults between 35 – 44 years were those with more work and family responsibilities and likely to be more affected by current life difficulties in Gaza. This evidence suggests that age is a risk factor for LBP symptoms but does not indicate that age influences LBP disability or health care usage; which could be important topics for future research. Research is needed to explore the influence of life difficulties on prevalence rates and disability of LBP among similar age-groups.

There are many social factors considered to influence LBP and disability. The current survey identified clerical work, being a housewife and being married as risk factors for LBP in Gaza. Clerks in this study refer to employees in different governmental departments. Socially, this group can be classified as an intermediate group with low incomes. It is possible that, because they had permanent jobs, they were less motivated to take time off work in the economic climate of the time and unlikely to
change their work patterns to accommodate their pain and disability. It is likely that they also feared losing their jobs because they were paid by the Palestinian National Authority, which was in financial difficulties. In addition, the majority of the clerks in the study were the main breadwinners with responsibility for big families. Thus it is suggested that the prevalence of LBP in Gaza is influenced by socio-economic factors, but future research is required to determine more precisely the impact of work and family responsibilities on LBP and their association with resulting disability.

Although this study was not designed to investigate the relationship between pain and disability, there is no evidence within the data to suggest that there is a direct relationship between pain and functional ability. This was demonstrated by male patients who stated that they did not stop working because of their pain. Highlighting the variation in beliefs of physiotherapists and patients in Gaza about the effects of physiotherapy reflects a lack of understanding of the relationship between physical signs and symptoms, functional ability and pain in patients with LBP. This information can be considered a good source for searching out strategies for improving physiotherapy for LBP based on characteristics of LBP and patients' needs.

It seemed that marital status was also a risk factor as data showed higher prevalence rate among married men and women than singles. Taking into consideration that it is the norm to marry in Gaza and the sample of single people was small compared with the sample of married participants, it would be difficult to consider marital status as a risk factor for LBP in Gaza. It would be a spurious association as most people in Gaza are married. In the literature, there is no evidence to suggest that marital status is a risk factor for LBP in western societies. Parents in Gaza struggle to meet family responsibilities in a difficult political and economic situation which may put more pressure on married men and women. More research would be helpful to examine if marital status can be considered as risk factor for LBP in Gaza.
8.2.3 Current physiotherapy provided for patients with low back pain and views of physiotherapists about it

The physiotherapeutic process of LBP discussed here includes referral, history taking, physical assessment, analysis and plan of treatment, treatment, evaluation, conclusion and the written final report, as described by Hendriks et al. (2000). This topic has been discussed in physiotherapist and patient focus groups reported in Chapters Six and Seven. Physiotherapists were asked to discuss how did they approach patients with LBP and what treatments they provided for this condition. They discussed all topics of the physiotherapeutic process of LBP. Patients were asked to describe their physiotherapy treatments, their expectations and satisfaction with physiotherapy. Both physiotherapist and patient groups discussed this process and provided their views about each topic of this process. Physiotherapists and patients expressed dissatisfaction with outcomes of physiotherapy.

Findings from the study reported in Chapter Five showed that Palestinian physiotherapists believed LBP to be associated with pathological changes and able to be treated by rest. They focused their treatment on pain relief rather than dealing with functional limitations. Moreover, these findings showed that Gazan physiotherapists treated their patients based on a biomedical approach and were more likely to attribute perceived treatment success to the modalities used either to the patient-physiotherapist relationship or the patients themselves. Systematic reviews of empirical studies (Linton, 2000; Waddell and Waddell, 2000) indicate that such beliefs can be considered as barriers to effective physiotherapy. The following sections discuss the components of provision of physiotherapy for patients with LBP in Gaza.

8.2.3.1 Referral to physiotherapy

It has been suggested (Hendriks et al., 2000) that the referral data should include patient's needs and expectations, reason for referral, the course of disability and participation problems, and information about additional diagnostic procedures and prognosis. Ideally, the physiotherapist should be able to contact the referring physician if the referral does not contain enough data (Refshauge and Gass, 2004).
The current study showed that the situation described above is not the reality of referrals in Gaza. The findings indicated that medical referrals for physiotherapy did not address the issues outlined in the literature and, in particular, there was no opportunity for communication between patients and physiotherapists and doctors. These factors, contributing to the problem of referral to physiotherapy, relate to the hierarchical nature of social and professional relationships between doctors and physiotherapists and patients in Gaza. Physiotherapists indicated that they would prefer referrals to include all relevant patient data and be accorded the professional autonomy to decide on appropriate treatment based on their professional expertise. Patients appeared to trust their doctors and believed that the referral gives directions to physiotherapy treatment. This was impacted on physiotherapists' clinical behaviour and resulted in patient's disappointment and dissatisfaction with physiotherapy. In western countries, empowerment of physiotherapists has led to the development of higher standards of physiotherapy practice and changes in the health care system (Barclay 1994). It is possible that empowerment of physiotherapists in Gaza would improve standards of treatment for all patients. This can be achieved through establishing new health policies, encouraging the Palestinian Physiotherapy Society to become more active, provision of physiotherapy information systems and cooperation among physiotherapists, government officials and other health care professions.

8.2.3.2 History taking

In taking a patient history, the physiotherapist tries to get a clear picture of the patient's health problem. This includes what a patient expects and prefers, what is the most important complaint, what the implications for daily life, which factors increase, decrease or maintain the complaint, and how the patient feels about his complaint and its consequences (Hendriks et al., 2000). In cases of recurrent LBP, the physiotherapist specifically examines possible causes for these repeated episodes, the total duration of the complaints and the time between episodes of LBP.

The physiotherapists and patients who participated in this study expressed a lack of physiotherapist-patient communication, necessary for adequate history taking. Furthermore, there were no medical notes or patient records upon which to base
history taking and patient progress. These findings are additional examples of professional barriers to the assessment of patients and highlight the need for establishing codes of professional practice for all health professions in the Gaza Strip.

8.2.3.3 Physical examination

The examination of patients with LBP should be focused on abilities and participation, instead of seeking a physical cause for the pain. This recommendation is based on the assumption that the referring doctor has excluded a specific cause for the condition (Bekkering et al., 2003).

The physiotherapist assesses a patient's disabilities and participation problems that were identified during history taking. The physiotherapist will also identify impairments such as decreased muscle strength of the back extensors, decreased mobility of the lumbar spine, decreased physical fitness, which may be related to the disability and participation problems. The purpose of the physical examination is to identify factors that may hamper or facilitate management, and to assess patient's level of physical fitness and functioning. However, even in western societies, there is limited evidence of the reliability and validity of diagnostic tests used by physiotherapists in the assessment of LBP (Potter and Rothstein, 1985; Krismer and van Tulder, 2007).

Physiotherapists who participated in the current survey emphasised the importance of physical examination for pain assessment and its related pathology, but did not widen their assessment to include other factors (psychosocial) that may influence management. Patients who participated in the current survey (see Chapter 7) stated that they had not been examined by the physiotherapists prior to receiving treatment, or at any point during their management. It can be argued that these findings contributed to the poor outcomes of treatment mentioned by both physiotherapists and patients and may explain patients' dissatisfaction with physiotherapy. Therefore, one issue of physiotherapy practice in Gaza may be the lack of assessment as recommended by the literature.
8.2.3.4 Problem analysis

Problem analysis is said to be a systematic process of collecting and analysing patient data that enables patients’ health problems to be defined. The physiotherapist synthesizes the data to identify the most important disabilities, participation problems and relevant impairments. The physiotherapist identifies the present physical, psychological and social factors maintaining or aggravating the complaint, including co-morbid problems. Finally the physiotherapist decides whether the health problem could be improved by physiotherapy or not (Pryor and Prasad, 2006).

In this study, physiotherapists stated that they did not deal with psychosocial problems related to LBP, as they considered that these issues were not within the scope of physiotherapy practice. In addition, there were no medical notes or patient records and no communication between doctors and physiotherapists. Both the absence of consideration of psychosocial factors and the limited patient data presented the physiotherapist with a “gap” in the data available for analysis. Patients who participated in this study stated that their physiotherapists did not have adequate discussion with them about their symptom. In light of these findings, the researcher suggests that the physiotherapy profession in Gaza needs to review the scope of practice and address the gaps in the management of patients with LBP. These issues need also to be considered in undergraduate physiotherapy education and continuing professional development. These changes cannot be effective without a review of medical notes and patient records and better communication between patients and physiotherapists and medical colleagues. Such measures could pave the way for better health services for patients with LBP in the Gaza Strip.

8.2.3.5 Treatment planning

The main objective of the treatment for LBP is a return to the highest level of activity and participation and the prevention of chronic complaints and recurrences (Burton, 2005). As most patients tend to return to their normal level of activities and participation, irrespective of treatment, one or two treatment sessions to coach these
patients may often be enough (Frost et al., 2004), aimed at encouraging patients to continue their self-management.

For patients with associated psychosocial problems, sub-goals of treatment may be to increase their knowledge and understanding and gradually increase activity and participation; to improve relevant functions, to promote an adequate coping style and to influence any other physical or psychosocial factors which may be associated and which are within the scope of physiotherapy. The main treatment interventions are systematic patient education and physical techniques aimed at relieving pain and improving function. The physiotherapist will actively encourage patients to take responsibility for the results of the treatment (Pryor and Prasad, 2006).

Physiotherapists who participated in the current survey stated that they had a physiotherapy plan and described their plan of treatment in terms of a treatment programme including treatment sessions and recommendations. The treatment sessions included the application of physical interventions, such as massage, electrotherapy and exercise therapy. Their recommendations focused on home exercise programmes, restriction of physical activities and back function and bed rest for acute conditions. The aim of this programme was to promote tissue healing and to relieve pain.

Theoretically, this plan of treatment excluded patients from active participation in their physiotherapeutic management and limited their contribution to solving participation problems that may affect their progress. Findings from patient focus groups showed that patients found personal ways to relieve their pain which were not recommended by their physiotherapists. This might indicate a poor therapist-patient relationship and loss of confidence. These findings suggest that physiotherapists in Gaza need to change their attitudes and beliefs about patient participation in the management of LBP. The researcher suggests that the topic of attitude change needs to be addressed in physiotherapy education and continuing educational programmes for physiotherapists.
8.2.3.6 Treatment modalities

Many systematic reviews have investigated the effectiveness of different physiotherapy modalities used in the treatment of LBP. The findings of these systematic reviews are summarised in Table 6.1 (see Chapter 6). There is strong evidence to suggest that staying active is an effective treatment and that exercise therapy, behavioural therapy and multidisciplinary pain treatment programmes are effective for chronic LBP. It is not clear which exercises are most effective, or if electrotherapy and massage are useful modalities for patients with LBP.

Findings from physiotherapist and patient focus groups showed that patients with LBP were recommended to restrict their physical activities and were treated by massage, electrotherapy and exercise. These findings indicate that physiotherapists in Gaza did not consider the evidence-based practice in their treatment. This would not be surprising in light of the limited ability of physiotherapists to travel and study outside Gaza and the limited access for professionals to enter Gaza. In theory, Gazan physiotherapists do have access to the internet, but this access is restricted to times when the electricity supply is operational. The researcher suggests that there is a need to address the issue of evidence-based practice by means of continuing professional development in Gaza.

8.2.3.7 Treatment conclusion and report

At the end of the treatment programme, it is good practice for the effects of the intervention to be evaluated and reported to the referring doctor. The written report usually includes treatment objectives, improvements in function, perceived quality of life and the reason for concluding treatment (Hendriks et al., 2000).

In physiotherapist focus groups, participants stated that they did not decide on, or report to, medical staff on patient discharge but that patients usually ceased treatment at the end of a course decided by the doctor. It is not surprising that this aspect of physiotherapy practice is non-existent in the Gaza Strip as gaps in physiotherapeutic
management and a lack of communication between physiotherapists and the referring doctors have already been identified.

8.2.4 Factors influencing delivery and outcome of physiotherapy provided for patients with low back pain

There is empirical evidence in the literature suggesting that recurrence does not reduce with the application of seemingly successful conservative intervention such as physiotherapy (Carey et al., 2000; Frost et al., 2004; Krismer and van Tulder, 2007). In the current study, patients have stated that physiotherapy reduced their pain to some extent but could not prevent further episodes. Although it would be difficult to compare physiotherapy provided in Gaza with that provided in the west because of their differences, it would be safe to say that neither western physiotherapy nor Gazan physiotherapy appears to be able to prevent additional recurrences of LBP.

The literature indicated that the outcome of physiotherapy of LBP can be influenced by personal, socio-cultural and professional factors (Kerssens et al., 1999; Ostelo et al., 2003; Houben et al., 2005). Personal factors include physiotherapist and patient beliefs and attitudes about the nature of LBP and its management. Socio-cultural factors refer to socio-cultural behaviours of both physiotherapist and patient during the progress and management of the condition. Professional factors refer to the clinical behaviour during the physiotherapeutic process utilised in the management of LBP. The current study investigated these elements in the Gaza Strip in order to achieve the objectives of the study.

Findings from the current study suggested that patients with LBP were not satisfied with the treatment they received. Reasons for this dissatisfaction appeared to be multifaceted, because patients had many unanswerable questions with regard to their symptoms and they felt a gap between what they expected and what they received. At the same time, findings of this study showed that physiotherapists believed that physiotherapy was effective. These findings showed disagreement between beliefs of physiotherapists and beliefs of patients with LBP and this disagreement had impacted on the delivery and outcome of physiotherapy. Moreover, this disagreement appeared
to be impacted on physiotherapists' desire to treat patients with LBP. Physiotherapists who participated in this study believed that LBP is a medical problem and that their clinical behaviour was affected by the health care system and attitudes of doctors and patients towards them.

The findings of the current study indicated that patients had developed coping tasks to avoid pain, but had not developed positive beliefs that could change their pain behaviour. Avoidance of pain is thought to lead to a lack of confidence in being able to influence events and an inability to develop coping skills and behaviours. Some patients stated that they stopped their physiotherapy sessions to save cost of transportation. In Chapter Two, it has already been mentioned that family and community support and religious faith provide coping strategies for pain relief in Gaza. The belief that chronic LBP would not lead to physical disability may be driven by the way people in Gaza perceived their pain and their social and economic needs and their religious belief that "every disease has a cure" (Khan, 1990). It is commendable that patients were able to find ways of avoiding pain, whilst still engaging in activities of daily life, but research (e.g. Frost et al., 2004) suggests that they need to participate actively in the process of managing their pain.

Patient education is thought to help patients to adopt positive beliefs about their pain but physiotherapists did not include patient education in their management of LBP. Patients who participated in this study highlighted their need for information about their back pain. The researcher suggests that physiotherapy education and continuing professional education should address the issue of patient education as an important part of physiotherapy practice. Changing patient attitudes needs collaboration from all health professionals as well as changes to the health care system. Such changes will not be easy to deal with and may take time and effort to address, especially in the current political and economic situation in Gaza.

Comparing findings from this study with findings from similar studies conducted in western societies (e.g Ostelo et al., 2003; Houben et al., 2005), showed differences between attitudes and beliefs of Palestinian physiotherapists and those of physiotherapists in western societies. These differences appeared to be reflected on the management of LBP and support the literature (Marquie et al., 2003; Perreault and
Dione, 2005; Krismer and van Tulder, 2007) that management of LBP can be influenced by socio-cultural, economic and professional factors.

8.2.5 Summary of the key findings

The findings of the current study described the prevalence rates and risk factors of LBP in the Gaza Strip. The findings showed that the prevalence rates in the Gaza Strip were within the international range with differences between men and women in some age-groups. For details please see Chapter 4. They identified psychosocial, cultural and professional issues that negatively influence physiotherapy practice. These influences appear to have led to poor practice and patient dissatisfaction. The professional hierarchy of the health system, social class differences between health providers, attitudes and beliefs of doctors and patients about physiotherapy and lack of communication between all those concerned appeared to impact on physiotherapy provided for patients with LBP. Physiotherapists and patients expressed dissatisfaction with outcomes of physiotherapy and a gap was found between expectations of patients and physiotherapy management of LBP in the Gaza Strip.

The current study support the western literature that LBP is a common problem in all societies and its symptoms are recurrent, fluctuating and can be influenced by psychosocial and cultural elements and different management approaches. Physiotherapists and patients who participated in this study showed disappointment of the physiotherapy provided for patients with LBP in Gaza which, to some extent, agreed with the literature. These findings suggest that the objectives of the study have been achieved.

8.3 Design of the survey

Implementation of the aims of the current study involved collecting epidemiological data from the general population, data about provision of current physiotherapy, and opinions and experiences of physiotherapist and patients about LBP and its management. The following section will discuss and critique the methodology and selected procedures that were employed to collect the information required.
8.3.1 Methodology

The use of mixed methods of quantitative and qualitative approaches to collect complementary data in clinical work has not always been considered to be trustworthy (LoBiondo-Wood and Haber, 2002), perhaps because researchers have varied beliefs about the nature of reality, resulting in different understanding and interpretation of findings. It is also possible that in combined qualitative/quantitative methods, concepts within the quantitative research tradition may be dominant when describing qualitative content analysis (Burnard, 1991). In the current study, the data has not afforded clear answers to each question, but the employment of such methodology has ensured that where answers or strong evidence has emerged, that this evidence is reliably based (Peto and Baigent, 1998). A possible reason for this evidence may be that, although, the current survey used different research methods, similar answers and evidence emerged in more than one part of the thesis. Therefore, the use of mixed methods provided a balanced and trustworthy picture of the topics under study (Neuman, 2003; Silverman, 2005). Specific methodological issues are discussed in relation to each part of the current survey in the following sections.

8.3.1.1 The prevalence of low back pain questionnaire

Steps were taken to ensure methodological rigour throughout the study of the prevalence of LBP in order to mitigate limitations inherent in the design employed in this part of the current study. The limited non-verbal communication in a telephone interview meant that the researcher had to rely more heavily on meanings conveyed and received through the voice (Gilllham, 2000). Losing visual clues may have affected the interviewers’ conclusions about respondents’ social meanings (Bailey, 1984). In such a population study, prompting and probing questions may be more difficult to ask, resulting in a loss of spontaneous responses and affecting the quality of data collected. It might also be argued that some respondents did not understand the questions asked and were unable to seek clues about how to answer. As the study recruited individuals who had experienced LBP during the twelve months prior to interview, there might have been an overestimation or underestimation of the
individual experiences recalled by participants (Bruins et al., 2003) which could affect the statistical data collected in the survey. However, themes emerging from patient focus groups were similar to data obtained from prevalence study. The overlap of issues raised by the two studies indicates that the findings were reasonably accurate and people's recollections in the telephone interviews were correct.

The purpose of this part of this thesis was to provide figures and insights into the epidemiology of LBP in the Gaza Strip. Data obtained from this part of the current survey are valuable for health policy and clinical practice as there were no previous available data to estimate the size of the problem and its determinants in the Gaza Strip. Despite the limitations that can be found in this method of research, the experience of the researcher and his helpers in this part of the study, and the data collected (for details see Chapter 4) suggest that the population telephone survey can be a good method to collect validated data on health and health care in situations similar to Gaza.

8.3.1.2 Physiotherapist Attitudes and Beliefs Scale (PABS-PT) Questionnaire

This questionnaire was developed in the Netherlands by Ostelo et al., (2003) to examine attitudes and beliefs of European physiotherapists towards LBP. Although the questionnaire had been piloted in Gaza, it is possible that the differences in education, health system and access to learning and technology could affect participant responses in the Gaza Strip. However the overlap of data obtained from this part of this thesis and the physiotherapist focus groups ensures that this potential problem was not translated into reality.

The questionnaire was translated from English into Arabic, two languages with differences in thought patterns and sentence construction. These differences can affect the way that concepts are expressed in different social contexts, as the same words may have different meanings and implications, depending on the social and cultural situations in which they are used (Oppenheim, 1992). Also, there is a possibility that differences between Palestinian and European physiotherapists' education and
practice do not allow complete congruence between attitudes held and the way in which they are expressed. Although the back translation method was used to translate the questionnaire from English to Arabic, it is possible, in view of the researcher’s lack of experience in such translation, that there may have been errors in translation as explained in Chapter 5.

As in the original questionnaire, the physiotherapists were provided with written instructions and an example answer. Within the current study, the physiotherapists were also able to contact the researcher for clarification of any ambiguity during completion of the questionnaire. Whilst it is feasible, it is highly unlikely that this procedure influenced the ability of participants to express their opinion, as none of the physiotherapists did contact the researcher for this purpose. The researcher made every possible effort to minimise errors in this part of the study throughout all stages of its conduct. Data obtained from this part of the study showed that attitudes and beliefs of physiotherapists about LBP could influence the outcomes of physiotherapy, which agrees with the literature discussed in Chapter One. Results of this study showed that physiotherapists in Gaza believed that LBP mainly results from pathological changes, which is reflected in their approaches to management and the outcomes of their treatment. The ability of this study to differentiate between attitudes and beliefs of physiotherapists in Gaza and physiotherapists in the west suggests that the use of the PABS-PT in this study was appropriate.

8.3.1.3 Occupational and Domestic Activities Photographs (ODAP) Questionnaire

The researcher decided that using the ODAP questionnaire, alongside the PABS-PT could enhance the validity and applicability of the PABS-PT questionnaire, as recommended by Ostelo et al. (2003). The use of one questionnaire alone might give rise to doubts about the validity of the findings, but the consistency found in the results obtained from both questionnaires proves that the use of the two questionnaires together gave greater confidence in the findings.
The ODAP questionnaire relied on respondents' ability to understand the appropriate way to record their answers. The researcher made every effort to explain how to do this, in the introduction to the questionnaire. However, the use of this questionnaire might be considered inappropriate because of the lack of clarity about the functional effects in LBP. In light of this, it is possible that allocating statistical scores for a physical activity may lead to bias and inconsistency. Additionally, the impact of LBP on physical activity cannot be viewed in isolation from LBP symptoms and physiotherapists' recommendations cannot be isolated from physiotherapy practice. Moreover, the use of a Likert-type scale, translated from English into Arabic language and used in a culture relatively unused to completing questionnaires might affect the reliability of scores (Miller and Salkind, 2002). It is possible that respondents, from an Arabic tradition, found it difficult to discriminate between so many variables. The fact that most of their scores were in the middle of the scale may indicate their inability to discriminate, but this is not known for certain.

The original questionnaire used photographs based on western activities and the researcher based the illustrations used in this study on daily activities in Gaza. Because of this, it may be difficult to compare findings from this study with those from western societies. Whilst all these issues should be taken in consideration, it was interesting to note that results of the ODAP concur with the results from the PABS-PT. For example, physiotherapists in Gaza believed that LBP is caused by pathological changes and rest is needed to promote healing. Similarity of results of the PABS-PT and the ODAP has increased the validity of the PABS-PT and ensured consistency in data collection. Additionally, production and conduction of the ODAP in Gaza allowed the researcher to explore the gaps in physiotherapy practice in the Gaza Strip. Moreover, these results are likely to reflect the influence of physiotherapists' recommendations on the progress of LBP in the Gaza Strip as expressed by physiotherapists in focus group discussions.
8.3.1.4 Focus group: to what extent was it appropriate to use in Gaza?

Focus groups were used to explore physiotherapists' views and patient experiences about the progress and management of LBP symptoms. The researcher needed to be able to conduct the interviews and perform data analysis before providing training to research assistants who acted as facilitators. This required him to develop appropriate knowledge and skills through module attendance, reading and practice (Patton, 1990). Despite this preparation, the researcher was relatively inexperienced in conducting focus groups and experienced some difficulties in designing the interview schedule, which may have influenced the quality of data collected. Additionally, the fact that the researcher was well known and respected in the physiotherapy profession in Gaza may also have affected results. Colleagues may have wanted to give answers that they thought were wanted and patients may have given positive answers because they thought their future treatment possibilities might be affected. All these issues were taken in consideration before conducting the focus groups, nevertheless, they must be acknowledged as possible limitations. For more details please see Chapters 6 and 7.

The use of thematic analysis of the transcript data (see Chapters 6 and 7) provided the researcher with interesting themes from the first focus groups that were incorporated into the second focus group discussions, and thus may have led to preconceptions. Bias may have occurred when such themes were not initially considered important to the participants and would not have been discussed without the researcher's intervention, and vice versa. Similarly, the earlier focus groups may not have been given the opportunity to elaborate on some issues discussed in depth by participants in the later groups.

Analysis of data obtained from focus groups could be influenced by the researcher's understanding of reality and interpreted in different ways. Although the researcher was careful to "let the text talk", it was inevitable that he would add some of his own perspectives to interpretations of findings. This could have led to the possibility of bias in balancing meaning and concepts. Moreover, at the beginning of the study, there was some concern about the willingness of female participants to discuss such
issues in front of a male researcher. However, female participants freely told of their experiences in the topics discussed in the focus groups, and the presence of the researcher did not seem to hinder their discussion.

Consistency between groups in physiotherapist focus groups and in patient focus groups may well indicate that the information gained was reliable. For example, findings from focus groups illustrated that physiotherapists were using physiotherapy on a prescription of up to six treatment sessions per every episode of LBP. Such findings could suggest that physiotherapists managed LBP according to a factor of time or resources rather than according to the needs of the condition. This evidence was also highlighted in patient focus groups when patients showed dissatisfaction with the treatment they received.

As focus groups have not been used in this sort of health environment in Gaza, or indeed, hardly at all in Arab Islamic cultures, it was a matter of concern and interest as to whether they would prove effective. The consistency in data obtained by physiotherapists and patients focus groups and the useful data obtained by the current study suggest that the focus group approach can be applicable in similar Arab Islamic cultures.

8.3.1.5 The sample

The sample used in the study consisted of the general population in the first part, physiotherapists, in the second and third parts, and patients with LBP in the fourth part of the current study. The variety of participants provided rich insights into the size of the problem and its physiotherapy management from different perspectives. It was originally intended to include medical practitioners in the focus groups in the current study, but it was later decided to focus on physiotherapists and patients in order to focus the study on the physiotherapy profession.

The telephone population study involved 0.0012% of the total population recruited randomly from the five districts of the Gaza Strip taking into account the proportion of each district population. This was an appropriate sample and can be said to
represent the population of the Gaza Strip which allows generalisation of the findings to the whole Gazan population (Mason, 1994; Picavet and Schouten, 2003).

The physiotherapists who completed the questionnaires and those who participated in the focus groups constituted the majority of those who had experience in management of LBP in Gaza, which assisted in the verifying the credibility of the data obtained (LoBiondo-Wood and Haber, 2002). In addition, the participation of two groups of patients with LBP in focus group discussions provided descriptions of patients' lived experiences which contributed to the trustworthiness of the overall study (Neuman, 2003). In light of the similarity between prevalence rates of LBP found in Gaza (Chapter 4) and themes emerging from the physiotherapist focus groups (Chapter 6) and the patient focus groups (Chapter 7), the views of the patients in the focus groups can be considered representative of those in Gaza with LBP.

### 8.3.2 Components of the study

The whole project was designed so that data obtained moved from a general view of the problem of LBP to a more specific picture involving perspectives of physiotherapists and patients; from a broad overview of the size of the problem to a more in-depth consideration of factors that impact on the problem for both providers and consumers of health care. The aim was to provide a clear and holistic description of the problem of LBP and its physiotherapy management in the Gaza Strip. This study employed combined quantitative and qualitative research approaches where it was appropriate in a complementary way in sequential stages to achieve the aims of the study. Quantitative research approaches provided numerical data about the prevalence rates of LBP and their risk factors in the Gaza Strip. They also provided descriptive statistical data on physiotherapists' attitudes and beliefs about LBP and its management. The researcher used the quantitative data collected in the first stage of the project to inform the discussion in physiotherapists' focus groups and subsequently in patients' focus group in the second stage of the project.

Comparing findings from the quantitative research component of the current study and other western studies published in the literature shows differences between Gaza
and western societies in prevalence rates of LBP and physiotherapy approaches used in the management of LBP symptoms. These differences identified socio-cultural elements that might influence the distribution and consequences of the problem of LBP. Additionally, results from this component of the study showed that physiotherapists' attitudes and beliefs were influenced by educational, socio-cultural and professional factors. These results agree with the literature documented in Chapter One and ensured that objectives of this component of this study have been achieved.

Data from the qualitative component of the current survey showed that physiotherapists in Gaza treated patients with LBP using traditional modalities of physiotherapy through a biomedical approach based on doctor's referral. These data provided insights into the socio-cultural, educational and professional factors influencing the scope of physiotherapy practice in the Gaza Strip. Additionally, data from patient focus groups showed that patients in Gaza were dissatisfied with the management they received and developed personalised non-professional methods to cope with their pain. Furthermore, socio-cultural and professional factors were identified that both physiotherapists and patients felt hindered successful management and described the impact of the problem of LBP on different aspects of patients' lives. The author suggests that these different data contributed to building up a holistic picture of the problem of LBP and its physiotherapy management that would not have been obtained without the contribution of both research approaches.

8.3.3 Validity of the study

The population of the current study included members of the general population, physiotherapists and LBP sufferers in the Gaza Strip. The sample of the general population was recruited randomly from the five restricts of the Gaza Strip. The physiotherapists and patients were selected from different physiotherapy departments in order to represent all sectors of health care and all districts of the Gaza Strip. The strengths of this study, using large sample, different methodologies and in-depth analysis, are such that they increase confidence about the possibility of generalisation
of the quantitative results and transferability of the qualitative finding to other Arab Islamic populations such the West Bank, Jordan, Lebanon and Syria.

It is fair to state that the physiotherapists participating in this study were experienced in the management of LBP. In the absence of documented evidence for physiotherapist's experience in Gaza, it is likely that the greater experience and qualifications of physiotherapists would ensure for more successful management. Eliminating the factors that might affect the outcome of the current study in study design and piloting, and achievement of aims of the study demonstrate that the external validity was maintained at a high level. Similarly, internal validity was well maintained, as participants well instructed, the parts of the study well monitored and all data inputting and checking thoroughly screened. The validity of the current study is such that the findings are reliable and can be generalised to other similar Arab Islamic countries.

8.4 Contribution to new knowledge

Low back pain is considered to be one of the least understood painful conditions (Hrudey, 1991; Waddell, 2004). As most research on this topic is from North America and Europe, it could be argued that this demonstrates a western bias in sampling and a gap in the literature. Investigating this problem in an Arabic culture within the specific situation in the Gaza Strip is an attempt to fill the gap in the literature. As part of the Arab world, Gaza shares many characteristics with other Arab, Sunni Muslim countries. There are other countries in the world under occupation, but few that have experienced the same extent and duration of political upheaval that exists in Palestine. In the Gaza Strip, in common with other countries, there are patients suffering from LBP and physiotherapists treating these patients. Before this study was conducted, there appeared to be no published data to describe this problem and its management in the Arab world, let alone in the Gaza Strip.

This study provided epidemiological statistics on the prevalence of LBP and its risk factors. This is new knowledge that has addressed a gap in the literature, as well as provided information for health professionals, health care educators and decision
makers in the Gaza Strip. The study provided a holistic picture of physiotherapy practice and its implications in a context which has not been investigated before. The average physiotherapist in Gaza used a biomedical approach to treat patients with LBP. Although physiotherapists showed enthusiasm about the biopsychosocial approach to LBP, they were not able to use this approach because it was not part of professional or continuing education, not considered part of the scope of practice of physiotherapy and they lacked the knowledge and skills necessary. The study also provided new insights into the socio-cultural and professional factors that influence the management of LBP in the Gaza Strip. The findings of the study provide the motivation for new strategies for improving physiotherapy education and practice in relation to LBP and pave the way for future research.

8.5 Implications for research in Gaza

People in Gaza have experienced extended instability in their lives, due to political and economic problems which have influenced their social life and health services. It is important that health issues, such as LBP, be researched during such times, in order to give health planners, researchers and clinicians insights into the ways in which patients and services are affected.

Health care research in Gaza, in general, is limited and more so in physiotherapy. The experience of participating in this research was novel for all concerned. However, the experience documented in this thesis has provided a beginning and hopefully future research projects will benefit as researchers and participants will be more familiar with research processes. Carrying out research projects in Gaza required selection of appropriate research approaches and samples. There is currently no ethical committee or special authority responsible for research yet in Gaza, which may affect the quality of research. Hopefully, the experience of monitoring and approving this project has led to greater familiarity with ethical processes involved in research.

Many members of the general population who participated in this study hesitated to talk about themselves initially when they were telephoned, because of the political situation at the time. However, after initial reservations, they were enthusiastic about
sharing their experiences. Physiotherapists who participated in completing questionnaires scored many items in the middle sections, which may indicate a lack of familiarity with completing questionnaires and unsure about the acceptability of their opinions. However, physiotherapists who participated in focus group discussion talked freely about their professional opinions and data obtained were rich and insightful, indicating their greater familiarity and comfort in a group discussion situation. Similarly, patients’ discussion provided rich insights about the problem of LBP and its management in Gaza, again indicating familiarity with group discussion situations. It was interesting to note that there were no differences between women and men in their participation when they were invited to take part in the study and women had no reservations to talk about their pain experiences.

All these issues have paved the way for future research in health care, and physiotherapy in particular, for other patient groups in Gaza. It is hoped that the success of this research project will stimulate other physiotherapists to investigate and explore professional and patient issues in Gaza that will contribute to an improved service, both for professionals and patients.
Chapter Nine

Conclusion and Recommendations

9.1 Introduction

This study sought to investigate the prevalence of LBP, physiotherapy provision for LBP and experience of patients in the progress and management of this disorder in the Gaza Strip. People in the Gaza Strip are Arabs and the vast majority of them are Muslims. Cultural and social factors, including attitudes and beliefs of physiotherapists and patients, that might influence the progress and management of the symptoms of LBP were examined. To achieve the objectives of the study, mixed methods of quantitative and qualitative research approaches were used. It was hoped that this project would have some important recommendations for the provision of physiotherapy for patients with LBP in the Gaza Strip. The intention was to explore the socio-cultural and professional factors that impact on physiotherapy practice. The findings of the study showed substantial gaps in physiotherapy education and practice. In the following sections, these issues will be highlighted and suggestions for improving physiotherapy education and practice will be made, with a view to improving patient satisfaction and outcomes of treatment.

9.2 The problem of low back pain

The study showed that LBP is a problem in the Gaza Strip with a prevalence rate similar to rates to other countries mentioned in the literature. Differences were found, in the accumulative prevalence of LBP, between Gaza and western societies, which indicated lower rates of disability in Gaza. Other differences were that marital status appeared to be a risk factor for LBP in adults and about one third of those with LBP had not sought health care in Gaza. These differences can be attributed to socio-cultural, political and economic factors.
9.3 The current state of physiotherapy practice

The study has highlighted a number of issues relating to physiotherapy provided for LBP sufferers in Gaza. Access to physiotherapy required prescriptive medical referral which was considered to be a barrier to effective physiotherapy assessment and management. All physiotherapists used a predominantly biomedical approach and considered management of the psychosocial dimensions of LBP in their treatment programmes out of scope of their practice. The main modalities used were massage, electrotherapy and exercise. They advised patients with LBP to do exercises at home and to restrict other work and daily physical activities. Patients showed dissatisfaction with their physiotherapy assessment and treatment. They expected better care and complained of lack of communication between them and their physiotherapists. Physiotherapists and patients were disappointed with the outcome of physiotherapy provided for patients with LBP in the Gaza Strip.

9.4 Impact of socio-cultural and professional factors on management of low back pain

Socio-cultural and professional factors were found to affect the relationships between patients, physiotherapists and medical practitioners in Gaza. Patients viewed doctors as more important than other health care providers, which reflected in their relationship with physiotherapists. Patients were dissatisfied with information received about their condition and concerned about its impact on their daily activities and future life. The centrality of family in Arab, Islamic culture is reflected in the desire of patients to continue working, either in the home, or in paid employment, despite their pain, to fulfil their family obligations.

Physiotherapists were frustrated by their lack of autonomy and lack of status which affected their relationship with both doctors and patients. The unequal doctor-physiotherapist relationship was reflected in the incomplete and prescriptive medical referrals received by physiotherapists and by the lack of communication between the two groups. This also was impacted on patients' desire to receive full information about their condition.
9.5 Implications for physiotherapy education and practice

The findings of the study have clear implications for practising physiotherapists, other health care professions, but this study concentrates on the physiotherapy profession. Physiotherapists treating patients with LBP had gaps in their knowledge about the factors that might influence the progress and management of LBP and affect the physiotherapist-patient relationships. Physiotherapy skills such as good communication, assessment and patients education were poorly applied by Gazan physiotherapists. Physiotherapists' attitudes towards patients focussed on their physical needs and did not consider psychosocial needs or the importance of active patient participation in the rehabilitation process. Physiotherapists lacked confidence to work independently and worked within a limited scope of practice. Patients highlighted their expectations and needs which could be addressed in the management of LBP.

Current physiotherapy curricula and teaching and learning methods in Gaza do not encourage students to problem solve or to think independently. These methods influence the way physiotherapists practice after graduation. The fact that few Gazan physiotherapists have had opportunity for continuing professional development inside or outside Gaza has also influenced the currency of practice.

9.6 Implications for the Arab world

Although, Gaza is in a state of political upheaval, Palestinians in Gaza share a similar cultural, religious and economic background with the similar parts of the Arab world. Therefore, findings of this survey may be transferable to other Arab, Islamic communities in the Middle East.

9.7 Recommendations

9.7.1 Further research is needed to investigate

- How to change patient attitudes and beliefs about LBP in Arab, Islamic
societies.

- Medical perspectives on management of LBP in Gaza.
- Medical practitioners’ knowledge about physiotherapy in Gaza.
- Replication of this study in other Arab, Islamic societies in the Middle East.

9.7.2 Recommendations for changes in practice

- Better written and verbal communication between doctors, physiotherapist and patients in Gaza.
- Better record keeping in hospitals and health clinics in Gaza.
- Physiotherapy assessment based on problem solving.
- Review of undergraduate physiotherapy curricula.
- Provision of workshops on biopsychosocial approach to management of LBP for physiotherapists in Gaza.
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