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The long term physical and psychological consequences of playing professional football

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ABSTRACT

Playing professional football is a high risk occupation. Injury rates among professional footballers are higher than those commonly found in other industries. Several Scandinavian studies have begun to document the long-term physical health problems, such as osteoarthritis (OA), that can beset ex-professional footballers. However, the experiences of ex-professional footballers playing and living in the United Kingdom (UK) have not received similar academic attention. Furthermore, no studies have investigated the impact that OA has on the quality of life of former players anywhere in the world. This thesis aimed to rectify these omissions, thus the focus provides a unique research topic investigating a widespread and serious health problem among a cohort that has been largely neglected to date.

In Phase I, 284 ex-professional footballers responded to a postal survey which aimed to establish the prevalence of injury and OA. In Phase II, 12 semi-structured interviews were conducted with ex-professional footballers from Phase I who had developed OA. The aim was to gain an in-depth understanding of how the condition impacted on their lives and how they coped. In Phase III, 101 ex-professional footballers, who were not involved in Phases I and II, responded to a cross-sectional postal survey, which investigated the relationships between pain, pain coping and psychological distress within the context of a stress and coping model.

Career injury and surgery were common among respondents in Phase I and nearly half (49%) had subsequently developed OA in at least one joint. Pain was the most common problem for all respondents irrespective of OA diagnosis. Lack of mobility and work disability were other problems reported by respondents. Interviewees in Phase II described how they were encouraged to 'play hurt' during their career and to accept, minimise or ignore threat of pain, injury and OA. It was some of these attributes which enabled respondents to 'live hurt' in the presence of chronic pain and disability in later life. In Phase III it was shown that psychological distress was not a serious problem for many respondents. However, several coping strategies (denial, emotional venting and upward comparison) were positively associated with pain and psychological distress, particularly for those participants in greater pain.

Although OA and chronic pain are prevalent among ex-professional footballers in the UK, its impact upon psychological distress was not as great as reported in some other studies of persons with chronic disease and pain. Increased psychological distress was linked to greater pain and the use of several coping strategies (e.g. denial, emotional venting, upward comparison). However, given the cross-sectional design, it remains to be clarified whether coping predicts psychological distress or whether an increase in psychological distress precipitates more coping. Suggestions are proposed for a psychosocial intervention which would have an impact on pain coping and psychological distress among ex-professional footballers.

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On a personal level I hope that this thesis provides inspiration to Jord and Saff to strive to achieve their potential - although I recommend achieving it before being called to '*carousel*'. Finally, I would like to thank Georgie for her love, friendship and support over the last three years.

TABLE OF CONTENTS

CHAPTER 1.0 INTRODUCTION, AIMS AND OBJECTIVES

1.1 OVERVIEW

This chapter briefly introduces the issues examined in the thesis and provides a brief context and rationale for the research. A more detailed exploration of the points outlined here are presented throughout the thesis. The chapter is divided into 3 sections. The first section (1.2) situates professional football as an occupation characterised by both short-term and long-term health risks, a view which is being increasingly recognised by the sports regulatory authorities. This sets out a justification for the study and supports the origin of the aims and objectives outlined in section two (1.3). The third section (1.4) completes this initial chapter by describing the structure of the thesis and briefly explains the purpose and content of Chapters Two to Seven.

1.2 STUDY CONTEXT AND RATIONALE

With the global popularity of football, both as a spectacle and a form of recreational exercise, there is growing interest in determining whether playing poses any immediate and long-term health risks. For example, in the UK, the Football Association is currently conducting an audit of all injuries suffered by professional players in England and Wales. Findings will be used to promote injury prevention strategies. A number of European studies have provided details about the long-term outcomes of surgical procedures (e.g. meniscectomy) undergone by players during their playing career (Chantraine, 1985; Neyret, Donell, Dejour & Dejour, 1993; Rangger, Kathrein, Klestil & Glotzer, 1997). Injuries and surgery to the meniscus are suggested risk factors for knee OA (Kujala et al. 1995; Roos, 1998). Prevalence of osteoarthritis (OA), which is a chronic, often painful and disabling condition, among Scandinavian former top level players varies between 14% (Klünder, Rud, & Hansen, 1980) to 52.7% (Lindberg, Roos, & Gärdsell, 1993), depending on diagnostic criteria and joint(s) examined. Other studies have reported post-career musculoskeletal symptoms among former European professional footballers (Raty, Kujala, Videman, Crites Battie, & Sarna, 1997; Sarna, Kaprio, Kujala, & Koskenvuo, 1997).

Despite the evidence from Europe that OA is more common among ex-professional footballers than the general population, the UK Industrial Injuries Advisory Council (IIAC) has resisted calls for OA of the knee resulting from playing professional football to be included in the Industrial Injuries Scheme under the Contributions and Benefits Act (1992). Osteoarthritis of the hip resulting from playing professional football is currently under consideration for inclusion by the IIAC as an industrial injury, but until stronger evidence has been published it is unlikely this will occur (Drawer & Fuller, 2001). Thus, an assessment of the extent of OA and its impact among ex-professional footballers in the UK is timely. Further justification for the timeliness of this thesis is provided by The United Nations, the World Health Organization and 37 countries all of which have proclaimed the years 2000-2010 as the Bone and Joint Decade. This global initiative is intended to improve the lives of people with musculoskeletal disorders, such as arthritis, and to advance understanding and treatment of musculoskeletal disorders through prevention, education and research. One of the main aims of the Bone and Joint Decade is to raise awareness and educate the world on the increasing societal impact of musculoskeletal injuries and disorders.

Only one study has examined the propensity for OA among UK former professional footballers (Adams, 1976). Further, no studies have investigated the psychosocial impact of OA among ex-professional footballers anywhere in the world. This is a critical omission as evidence from the general health literature, which has traditionally comprised mainly female patients, shows that OA causes pain, disability and psychosocial problems (Decker, Boot, van der Woude, & Bijlsma, 1992; Mattsson & Broström, 1991). Moreover, the disease can have a negative impact on many other dimensions of health-related quality of life (HRQL) including employment and activities Yelin, Lubeck, & Holman, 1987). Given these findings, one might expect some UK former players with OA to be similarly adversely affected. Given the anecdotal evidence presented in the media there appears to be some substance for this assertion. It was deemed important to extend the opportunity to ex-professional footballers who did not play at the highest level, and who by virtue of this fact do not have access to the media, to comment on or raise awareness of their physical and psychosocial health.

Summary

The risk of developing OA and musculoskeletal symptoms has been documented largely among European ex-professional footballers, but as yet the evidence attesting to similar problems among UK ex-professional footballers is limited. Thus, the focus of this research topic is timely in its aims in investigating a widespread and serious health problem among a cohort that has been largely neglected to date.

1.3 AIMS AND OBJECTIVES

The research described in this thesis comprised three distinct phases:

Phase	Aims
Phase I	• To document the short-term and long-term physical and psychosocial consequences of playing professional football in the UK. • To compare physical and psychosocial consequences between former professional footballers with and without a diagnosis of OA.
Phase II	• To gain an in-depth insight into the experience of living and coping with OA and chronic pain from the perspective of former professional footballers.

Phase III	To examine the experience of coping with chronic pain from the perspective of former professional footballers using key variables (e.g. pain, pain coping, psychological well-being) emerging from Phases I and II

Specific objectives

Phase I

Set within a UK context, the objectives of Phase I were to:

- Examine factors contributing to the development of OA.
- Describe the clinical, demographic and psychosocial status of ex-professional footballers in the UK with and without a diagnosis of OA via a cross-sectional, postal survey using validated measurement tools.

Phase II

With respect to respondents from Phase I who had developed OA, the objectives of Phase II were to:

- Describe how ex-professional footballers adapt to and cope with OA.
- Identify salient coping strategies which would inform the selection of coping measures used in Phase III.

Phase III

The objectives of Phase III were to:

- Examine the relationships between pain, pain coping strategies and psychological distress.
- Examine whether pain and pain coping strategies predict psychological distress.

1.4 CHAPTER SUMMARY: THE STRUCTURE OF THE THESIS

The remainder of this thesis comprises 7 chapters.

Chapter 2 examines professional football injuries from an industrial disease perspective and examines the evidence of a culture within professional football that leads players to train and play when injured and in pain. A review of the current literature on OA with respect to aetiology from non-playing factors (e.g. genes) and playing factors (e.g. trauma, injuries) is also given in this chapter. A review of the current literature on arthritis with respect to psychosocial (e.g. depression, anxiety, work disability, social roles) and physical (e.g. pain disability), concomitants is also given in Chapter Two. Finally, the chapter ends with a review of the ways persons with arthritis and other chronic conditions manage disability and pain.

Chapter 3 discusses the methodological approach adopted in this study. Psychosocial aspects of chronic disease issues have been researched adopting either quantitative or qualitative methodologies. The strengths and weaknesses of each approach are outlined. Justification for the adoption of a combined rather than single methodology regarding data in this study will also be presented.

The fourth chapter presents the results from a cross-sectional, postal survey of 284 ex-professional footballers describing the long-term consequences of playing professional football in the UK in terms of medical treatments and development of OA and their impact on HRQL. Differences in health and psychosocial status between former players with and without OA are presented.

Chapter 5 presents an interpretative analysis of data from 12 in-depth, semi-structured interviews with ex-professional footballers who had developed OA. The findings shed light on the physical, social and emotional concomitants of OA and the ways in which ex-footballers adapt and cope. The findings also inform the selection of coping measures for the final study.

The sixth chapter presents the results from a cross-sectional, postal survey of 101 ex-professional footballers investigating the relationships between pain, pain coping and psychological distress within the framework of a stress and coping model.

Chapter 7 evaluates the extent to which the aims of the research have been fulfilled together with a summary of the main findings and their implications. This chapter will also suggest directions for future research.

CHAPTER 2.0 BACKGROUND

2.1 OVERVIEW

The purpose of this Chapter is to provide a background to the subsequent phases of the research. The literature review commences by distinguishing OA from another common form of arthritis (rheumatoid arthritis) and then explains why persons who work in weight-bearing occupations (e.g. farming) or participate in weight-bearing and/or contact sports (e.g. weight lifting, football) expose themselves to a greater risk of developing OA. Next, evidence is presented which shows that playing with pain and injury is a central aspect of the culture of professional football and discusses some of the practices which contribute to maintain this culture. The main clinical features of OA are then described, followed by discussion of some of its more serious psychosocial consequences (e.g. anxiety, depression, pain, disability). Finally, the chapter ends with a review of the strategies persons with arthritis and other chronic conditions employ to manage disability and pain.

2.2 TYPES OF ARTHRITIS

There are over 200 known rheumatic diseases and over eight million people in the United Kingdom (UK) have arthritis or one of the other conditions in this group. More than three million people in the UK are disabled by a rheumatic disease, making it the principal cause of physical disability in the UK (Badley & Tenant, 1993). Approximately twenty per cent of all GP visits are arthritis-related. Despite being the leading cause of physical disability in the UK, arthritis has received only minimal societal recognition.

The generic, diagnostic label of arthritis is used to encompass over 200 different types of musculoskeletal, connective tissue and non-articular conditions with the most prevalent forms in adults being rheumatoid arthritis and osteoarthritis (Taal, Seydel, Rasker, & Weigman, 1993). Although arthritis is primarily a disease of the joints, there are a number of types of arthritis (e.g. rheumatoid arthritis) that affect bones, tendons, muscles, the skin and internal organs.

Rheumatoid arthritis (RA) is a systemic inflammatory disease of the joints that affects approximately 1% of the population (Schumaker, 1988) and is of unknown aetiology. Onset typically occurs between the ages of 20 and 50 and is three times more prevalent in women (McIntosh, 1996). In RA, the synovial tissue surrounding the joint becomes inflamed. Over time, persistent inflammation causes the synovial tissue to thicken, thus resulting in joint deformity. Although the most commonly affected joints are those peripheral in nature (e.g. hands and feet), RA can attack almost any joint, tendon, surrounding tissue and organ systems (e.g. the eyes and lungs).

There is no agreement on a definition of OA, although Hough & Sokoloff (1989) offer the following definition:

> "Osteoarthritis is an inherently non-inflammatory disorder of moveable joints characterized by deterioration and abrasion of articular cartilage, as well as by formation of new bone at the joint surfaces.

'Osteo' means bone and 'arthritis' means joint damage and swelling (inflammation). Other words used to describe osteoarthritis are osteoarthrosis, arthrosis and degenerative joint disease.

Osteoarthritis is a slow process that develops over many years. In most cases, there are only incremental changes which affect only part of the joint. In some cases though, OA can be more severe and disabling. Table 2.1 shows the possible progression of OA across the lifespan. Little or no correlation exists between joint symptoms and abnormalities detected by radiographs. Approximately 30% of patients with radiographic evidence of OA (e.g., joint space narrowing) develop symptoms (Cobb, Merchant & Rubin, 1957). Furthermore, radiographic progression is not inevitable (Creamer & Hochberg, 1997). Over a quarter of patients in one study showed no change in radiographic feature at 5 years follow-up, with the joints of some patients appearing to improve as evidenced by recovery of joint space (Ledingham, Regan, Jones, & Doherty, 1995).

Table 2.1. The increments of osteoarthritis

Age	Stage	Osteoarthritis
20	Start	Abnormal cartilage staining
30	Discernible	Slight joint space narrowing
40	Sub clinical	Bone spurs
50	Threshold	Mild articular pain
60	Severe	Moderate articular pain
70	End	Disabled

(Fries and Crapo, 1981)

The number of people with OA is increasing as the proportion of elderly people in the population increases. Moderate or severe OA in one or more joints rises progressively with age. In a community survey, 60% of persons aged over 65 had moderate or severe OA in at least one joint (Kellgren, Jeffrey, & Ball ,1963). Not everyone is equally susceptible to OA. OA is more common in men than women before the age of 45, but more common in older women. Hands and feet are the most commonly affected joints, with knees and hips less affected. Risk factors for developing OA differ by joint and include: age, gender, obesity, genetic predisposition, increasing chronological age, occupation and joint trauma (Vingard, 1994).

Morbidity (i.e. declines in physical functioning, work disability and a reduction in quality of life), rather than mortality, has been the focus of the majority of studies addressing long-term outcomes of rheumatic disease. However, a review of mortality data within the field of rheumatic diseases conducted by

Callahan & Pincus (1995) has revealed that most, if not all, rheumatic diseases are associated with increased mortality rates, particularly those that are inflammatory in nature. For example, OA has been found to shorten the life-span by a few years and RA by 5 - 15 years.

2.3 OCCUPATION AND SPORTS-RELATED OA

The repetitive use and excessive mechanical loading of some joints appear to constitute risk factors for OA (Croft, Cooper, Wickham, & Coggon, 1992). High-impact loading may result from one extensive episode or from repetitive hard and fast loading on joints (Radin, Burr, Caterson, Fyhrie, & Brown, 1991). Initial evidence of this link has been established in studies of paralysed patients. Paralysed limbs are generally free from OA (Glyn, Sutherland, Walker, & Young, 1966) and amputations occurring below the knee protect against OA in that knee (Peyron, 1986). Certain occupations such as mining and foundry work have a high prevalence of OA (Felson, 1994). Croft et al. (1992) found that OA of the hip was more common in farmers, particularly those who had ten or more years in agricultural work. Severe OA was associated with standing, walking, especially over rough ground, and lifting heavy objects. Performance artists such as ballet dancers (Andersson et al., 1989) are also at risk for OA. Ballet dancers experience a high joint loading and are at an increased risk for joint laxity, both of which may contribute to later development of OA. Studies involving elite athletes have identified a number of sports which are associated with a risk for developing OA. These include Australian Rules footballers (Deacon, Bennel, Crossley, & Bruckner, 1997), runners, weight lifters and footballers (Kujala et al., 1995). In Deacon et al.'s study, the group of Australian Rules footballers with a history of intra-articular ligamentous and/or meniscal injury were at much greater risk of developing radiological OA of the knee compared to a group of footballers who had not experienced such knee problems and at even greater risk compared to a control group who had not played any contact sport since their teenage years. Kujala et al. (1995) similarly found that the strongest risk factor for knee OA was previous knee injuries. Findings of greater risk of OA among those with a preceding injury is an important finding and partly explains why some studies have found no relationship between exercise and OA. This point is emphasized by Dorr (1991) who states that: "The number of people participating in athletics does not equal the number of people with arthritis." (p397). In a review of the contradictory evidence of a relationship between exercise and OA, Panush & Inzinima (1994) concluded that exercise which avoids injury or trauma will not inevitably result in OA, but concern remains for joints that are put through an abnormal motion and/or are exposed to injury.

A number of studies have provided details about the long-term outcomes of surgical procedures (e.g. meniscectomy) undergone by professional footballers during their playing career (Chantraine, 1985; Neyret et al., 1993; Rangger et al., 1997). Injuries and surgery to the meniscus are suggested risk factors for knee osteoarthritis (Kujala et al., 1995; Roos, 1998). Other studies have similarly documented the increased risk for developing OA among footballers. Klunder et al. (1980) compared 57 retired footballers with a mean age of 56 years with a control group of men who were considered to be "non-active" footballers and found a higher rate of radiographic hip OA among the footballers (52.7% vs 33.3%). No difference was found for knee OA. Lindberg et al. (1993) compared 286 former footballers with an age-matched control group and found low rates of hip OA among both groups, 5.6% and 2.6% respectively. However, hip OA among the 71 former professional players was much higher at 14%. The prevalence of knee OA among the elite group was 15.5%. In another study, the rate of knee OA was 29% (Kujala et al., 1995). None of these studies investigated the psychosocial consequences associated with long-tem injury and disability.

2.4 FACTORS EXPLAINING THE INCREASED RISK OF INJURIES AMONG PROFESSIONAL FOOTBALLERS

Football injuries: an industrial disease perspective

In the UK, the Football Association is currently conducting an audit of all injuries suffered by professional players in England and Wales. Findings will be used to promote injury prevention strategies. Football is a high-speed contact sport with a high incidence of injuries. Several studies have reported the frequency, severity, and types of injuries associated with playing football at the elite level (Hawkins & Fuller, 1998; Hawkins & Fuller, 1996; Kujala et al., 1995; McGregor & Rae, 1995). The most common injuries are sprains and strains affecting mainly the ankle and knee joints (Ekstrand & Gillquist, 1983).

Fuller (2000) and Hawkins & Fuller (1996) have adopted a public health/legal framework in their assessment of football injuries. They show that the injury rate in professional football greatly exceeds that in most other industries. For UK industry and commerce, the average injury rate for lost time accidents for the period 1994 to 1997 was 0.004 injuries per 1,000 working hours. The equivalent rate of injuries for the same period in English professional football was 7 injuries per 1,000 hours of competition/training (Fuller, 2000). As Table 2.2 shows, the types of injuries are quite similar across the different work environments with strains/sprains followed by contusions as the most prevalent injury occurrence. A recent UK report found that knee injuries, particularly cruciate ligament and meniscus injuries, accounted for nearly half (49%) of all injuries, resulting in enforced premature retirement for the period 1987/88 to 1994/95 (Windsor Insurance Brokers, 1997). The report also indicated that for each season over an eight-year period, 51 players and trainees were forced to retire prematurely through injury, illness or accidents.

Fuller and colleagues conclude from their work that football clubs are remiss in their responsibility for providing information on injury prevention and state that:

> "To encourage or allow a player to continue to play whilst suffering from an injury, which could lead to further deterioration in condition, is condoning an unsafe practice; as such there is a breach of health and safety legislation." (Fuller & Hawkins, 1997, p 148).

Table 2.2. Type of lost-time injuries in professional football and industry

	Proportion of injuries (%)	
	Football	Industry
Strains/sprains	61	37
Contusions	20	17
Fractures	4	16
Lacerations	2	8
Others	13	22

Fuller, (2000)

Recruitment and qualifications of club medical personnel

Related problems are the qualifications and expertise of club medical staff. In a recent study, Waddington, Roderick, & Naik, (2001) investigated the methods of appointment and experience of club doctors and physiotherapists. They found that many club doctors were recruited informally through personal contacts and were inexperienced in sports medicine. Half of all the physiotherapists in the study were not chartered and tended to be employed at clubs outside the Premier League, resulting in a state of affairs whereby professional footballers are being treated by people who are not qualified to work in the National Health Service (NHS). Some physiotherapists were also recruited informally and there was evidence of an "old-boy's network" in that in some cases the decision to appoint was made by the team manager. There was one instance of a newly appointed team manager replacing a chartered physiotherapist with a non-chartered physiotherapist with whom he had worked at a previous club. The club doctor described to the authors how the appointment of the lesser qualified physiotherapist arose:

> "I wasn't involved in choosing him and I wasn't desperately happy with that situation… I suppose I had hoped that having been here for a while they might consult me… it just happened very, very quickly and so it was difficult because when the manager suggested this guy who he'd

> actually worked with before – that was the connection – I said, 'That's fine', He said, 'it's this great physio. He works really hard and he'll be fantastic'. I never thought to question when somebody said the physio was…. Very, very good and very experienced, that he wasn't chartered. That was my mistake. By the time I met him and said, 'Where did you train?' and he said he'd done the Sports Therapy Course, he'd already sold his house… and arranged to move… he knew I wasn't comfortable with him but, at the same time, the appointment had been made (Waddington et al., 2001, p 50).

There are obvious concerns about the potential conflict of interest that could arise when the manager and the physiotherapist he was responsible for employing disagree about treatment of an injured player, a sentiment captured by a senior player:

> "When a manager brings in his own people, that is where there is concern because this person is relying on the manager for his job and he's not going to go against the manager" (Waddington et al., 2001, p 52).

Several doctors and physiotherapists in the study described incidences of "unhelpful" interference from the coaches and/or managers in the treatment process. The most common qualification held by the non-chartered physiotherapists in the study was the Football Association Diploma, which is a route commonly favoured by former players who want to retain a role within the game. Waddington et al. (2001) raise concerns about the potential for compromised treatment and health for players who are under the care of physiotherapists who are former players. This is because of the culture of 'playing hurt' that the physiotherapists have been exposed to during their own playing career, which endorses continuing to play when injured and/or in pain, with the aid of painkilling injections if necessary. The authors also argue that chartered physiotherapists who have had clinical experience within the NHS and are cognisant of stricter standards of professional and ethical care will be in a stronger position to maintain clinical autonomy. In a related study

(Roderick, Waddington, & Parker, 2000) a football club physiotherapist who also had a private practice in the evenings explained how the different treatment ethos of the two environments meant that professional footballers received poorer quality treatment:

> "In private practice, the client isn't desperate to be fit by Saturday. The client wants to be cured of injury so it doesn't come back... In private practice , my modus operandi is to cure the injury. In professional football, my modus operandi is to get the player on the pitch as quickly as possible ... you get people who are playing on injuries that need constant care."
> (Roderick et al., 2000, p.172).

On the basis of their findings, Waddington et al. (2001) put forward a range of proposals to remedy the catalogue of bad practice they uncovered including ensuring all doctor and physiotherapist vacancies are advertised in appropriate professional journals and chartered status to be the minimum qualification for physiotherapists.

Socialisation and normalisation of 'playing hurt'

There are many stakeholders with an interest in ensuring a player does not unnecessarily miss a game through injury. These include the manager, club chairman, shareholders, spectators and sponsors. The increasing commercialisation of football has been posited as a factor which may result in increasing pressures on medical staff to treat or rehabilitate players in a manner which they find unacceptable, or allow a player to return from injury too soon (Fuller, 2000). Sponsors, too, expect 'star' players to perform when it might not be in the player's or club's best interests. It has been widely reported in the media that Brazilian hero Ronaldo has written into his contract by the national team's sponsor, Nike, that he must make a minimum number of appearances. There are obvious health implications of this type of pressure if the player is injured. This is what is thought to have occurred during the 1998 World Cup finals where on the day of the final, despite having an adverse reaction (widely rumoured to be a fit) to painkillers he was taking for a long-standing knee injury, he appeared in the game noticeably distressed and performed under par. However, it is not only the sponsors, managers or chairmen who are complicit in ensuring players continue to play when injured, as often the players themselves are involved in or unilaterally make the final decision. The former chairman of the Professional Footballers Union, Pat Nevin, recalls in his book, *In Ma Head Son,* one occasion he returned before fully rehabilitated from a serious anterior cruciate injury:

> "Looking back now it was total and utter recklessness, bordering on stupidity … there wasn't even any pressure from the club – the pressure I was feeling was self-imposed." (Nevin & Sik, 1997, p.218).

Roderick et al. 2000 found widespread evidence of sentiments similar to those expressed by Nevin among a group of current and former players. Players were immersed in a highly masculinised culture in which they internalised the belief that playing in pain is a normal part of football. Senior players told of how they only reckoned to play half-a-dozen games throughout a season (a season usually comprising over 50 games) in the absence of pain and/or injury. Common reasons for not wanting to miss a game included fear of losing their place to another player, reluctance to forfeit appearance related bonuses, professional pride and guilt about letting the club down. All the players Roderick et al. interviewed disliked missing matches through injury and only did so as a last resort. Through their interviews, Roderick et al. uncovered evidence of what is referred to in football as having a 'good attitude' to injuries which is reinforced by punitive practices by key personnel at the club. One player described the important elements of a 'good attitude' in the following quote:

> "We had a player ... and he had a fantastic attitude as in, he used to play constantly through injuries and they would get worse and worse. He'd be injured one week and … two weeks later he'd have the injury again. When you get a dead leg, you know, if you start running on it in the first twenty-four hours, you've got no chance, it can get worse …

> he'd play through to show the management that he had a fantastic attitude. But he was constantly injured. Constantly injured." (Roderick et al., 2000, p169).

Injured players told of being marginalised and stigmatised by managers. Several players recounted episodes of being injured and ignored by his current and former manager:

> "My present manager is like that. I've heard him speaking to one of the players. He said: 'You're no use to me now, so what's the point in talking to you and seeing how you are'. I've been injured three weeks now and he's asked me for the first time today how I am. Just as I'm getting back to fitness." (Roderick et al., 2000, p170).

Players told of how the attitude of some managers meant that players had to train even if this ran counter to the advice of the physiotherapist and/or surgeon. At some clubs injured players were subjected to a regime which reinforced feelings of worthlessness and which let the players know in no uncertain terms that they were not earning their wages. One way of achieving this was to 'inconvenience' players, which entailed keeping injured players behind at the training ground to ensure their departure coincided with the start of the rush hour traffic. Another method was making injured players report for treatment on a Sunday. One physiotherapist captured the sentiments of many of the managers he had worked for towards injured players:

> "I've frequently had it said to me when I've worked at professional soccer clubs: 'inconvenience the injured player. We don't want them too comfortable in the treatment room, sitting in the warm when the rest are out there in the cold'. There's this paranoia. I never could work it out, I don't know why it really exists." (Roderick et al., 2000, p171).

Adopting a role-identity perspective, previous work from the US has described how athletes are socialised into viewing their bodies instrumentally and learn to accept pain and playing injured as normal. The normalisation of sports injuries occurs in a number of ways including minimising and/or discrediting dialogues that challenge the 'moral code' of ignoring injury and playing in pain (Nixon, 1993). Through his examination of the career of a college wrestler (Sam), Curry (1993) describes how relationships with key figures in the athlete's life shaped his attitudes towards pain and injuries. The wrestler's earliest memories were of his father routinely ignoring his own sports-related injuries, thus providing his son with a role model to be emulated. Other role models included coaches, other senior wrestlers and college medical staff, all of whom contributed to shaping an attitude which minimised pain and injury. For instance, coaches were instrumental in persuading Sam to train and compete when being treated with painkilling injections. Similar to the injured footballers in Roderick et al.'s study, when injured, wrestlers were 'inconvenienced' by having to continue to attend training and marginalised by not being made to feel part of the team. This practice runs counter to the recommendations of sports psychologists, who recognise the importance of injured athletes maintaining a supportive social network which can enhance the rehabilitation process. To be accepted by the coaches, all serious injuries had to be confirmed by a member of the medical team. Where medical confirmation was not forthcoming and the wrestler involved was not prepared to resume wrestling, he was dropped for the remainder of the season. During the season, Sam experienced a serious visible injury to his ear which, although extremely painful and also embarrassing, became an "emblem" of his status as an elite wrestler. Sam was fully aware of the injury and health risks involved and at times admitted feeling scared. Curry (1993) interprets Sam's attitude and behaviour as a reflection of his concern with achieving and maintaining peak performance as opposed to evidence of Sam simply adopting a macho identity.

There is a strong cognitive component involved in coping with pain and injury (Pen & Fisher, 1994). Studies have shown that athletes not only have to manage the negative emotions, such as anxiety and depression, associated with the onset of injury-related pain, but also cope with a rehabilitation process which also features painful and exhausting schedules (Fisher, & Hoisington, 1993).

The work of Fuller and colleagues and the testimonies of former and current players serve to establish that professional football is a high risk occupation that has at its core a culture which exerts pressure on players to withstand and/or ignore pain and injuries, thus ensuring that potential long-term consequences such as OA and chronic pain remain, for many, a dominant feature of life after they have retired from professional football.

2.5 OA AND MEDICAL MANAGEMENT

As already noted, OA is a chronic disease which has no cure; thus the emphasis is on management which aims to ameliorate pain, preserve physical functioning, and decrease the risk of joint deformity. For some, posture, gait and general mobility (e.g. ascending and descending stairs, rising in and out of chairs) are often affected. Compensatory walking patterns (e.g. limping and knee flexion) are often adopted unconsciously in order to protect painful joints. Osteoarthritis symptoms can be cyclical in nature, following an unpredictable pattern with periods of exacerbation and remission. Pain is often the most common and also the most serious problem in patients with OA (Downe-Wamboldt, 1991; Hampson, Glasgow, & Zeiss, 1996). A participant in Locker's (1983) study described her illness experience thus:

> "...overwhelmingly a life of pain; waking life is dominated by pain and structured by the strategies adopted to avoid or minimise it." (p.15).

Other problems such as functional limitations, pain at rest or during the night and impaired quality of life are also features of the disease (Creamer & Hochberg, 1997). Creamer & Hochberg (1997) note that there is a poor correlation between pain reporting and radiographic features of OA which can be partly accounted for by culture, sex and psychosocial factors. Women have been shown to report more OA related-pain, physical disability and exhibit more pain behaviours than men (Keefe, Lefebvre, Egert, Affkeck, Sullivan, & Caldwell, 2000). In a study examining the effects of gender on daily pain ratings of OA and RA patients, women's pain ratings were substantially greater than men's (Affleck et al., 1999). Men reported an increase in negative mood following a day when pain was present.

The differences between chronic and acute diseases can be seen in Table 2.3. Acute diseases are short-term and the treatment aims are to return the patient to normal functioning.

Table 2. 3. Differences between acute and chronic diseases

	Acute disease	Chronic disease
Onset	Abrupt	Usually Gradual
Duration	Limited	Lengthy, indefinite
Cause	Usually single	Usually multiple and changes over time
Diagnosis and prognosis	Usually accurate	Often uncertain
Technological information	Usually effective	Often indecisive; adverse effects common
Outcome	Cure	No cure
Uncertainty	Minimal	Pervasive
Knowledge	Professionals knowledgeable; patients inexperienced	Professionals and patients have complementary knowledge

Holman & Lorig (2000)

Management of OA is threefold: medical interventions (e.g. drug therapy and corrective surgery); physiotherapy and occupational therapy interventions (e.g. exercise, applications of heat and cold, joint protection); and psycho-educational interventions (disease information, self-management), with the latter increasingly offered both within clinical and community settings (e.g. Barlow, Williams & Wright, 1997). Drugs used to treat OA fall into two broad groups: pain-killers (analgesics) and non-steroidal anti-inflammatory drugs

(NSAIDs). NSAIDs reduce inflammation of the joint as well as pain. NSAIDs are 'slow-release' drugs meaning that the drug is gradually absorbed by the body a little at a time, rather than all at once. Some NSAIDs can damage the lining of the stomach and are associated with serious gastrointestinal complications such as perforation, ulcers and bleeds (Creamer & Hochberg, 1997).

Joint replacement is usually performed on patients suffering from severe arthritis where the pain interferes with activities of daily living . Replacement surgery can provide pain relief and allow patients to continue appropriate non-impact athletic activities such as swimming, cycling and golf (Dorr, 1991). Patients undergoing knee and hip replacement surgery in Scotland reported less anxiety and pain and increased functional activity at follow-up assessment. Interestingly, depression remained unchanged. Over 80 per cent of replacements are successful for up to ten years, but thereafter some require re-operation. The outcomes of second operations are generally poorer. Surgery can also lead to complications and infection, and merely exchanges the risks and disability associated with OA with the risks and disability associated with having a replacement joint, which in any case may last no longer than 10-20 years.

2.6 PSYCHOSOCIAL ASPECTS OF OA

There is currently very little published research documenting the impact of OA on psychosocial adjustment (Downe-Wamboldt, 1991) and the extant literature has a tendency to focus on women's experiences (e.g., Downe-Wamboldt, 1991). Existing knowledge on the effects of other chronic diseases, particularly RA, which impacts in a similar way to OA on psychosocial well-being will be discussed and related to OA. On a cautionary note, however, it is unclear at this stage how applicable the research on RA is to OA populations.

Bury (1991) described the onset of chronic disease as a "biographical disruption", emphasizing the impact that a chronic disease has on a person's life course. People with arthritis face a number of disruptions that can have far-reaching implications for the quality of their lives and also the lives of carers. Survey research has documented key health-related quality of life domains affected by arthritis, including psychological well-being (Anderson, Bradley, Young & McDaniel, 1985), social well-being (Revenson, Schiaffino, Majerovitz & Gibofsky, 1991), family relationships (Barlow, Macey, Struthers, 1993), employment (Lubeck, 1995), life satisfaction (Laborde & Powers, 1985) and restrictions in daily functioning and loss of independence (Taal, et al., 1993).

Anxiety and depression

Anxiety is common among people with arthritis and often stems from uncertainty about the disease diagnosis, disease course and symptomatology, fears of dependency and disability, concerns about the future, and worry about treatment and undesirable side effects (Krol et al., 1998; Taylor, 1995). Creamer, Lethbridge-Cejku, Costa,Tobin, Herbst, & Hochberg (1999) examined the relationship between anxiety and depression among patients with knee pain and found that women patients' anxiety was related to pain reporting and that women had higher levels of anxiety and depression compared to men. In a UK study, compared to controls, patients with RA reported higher levels of anxiety and depression (Pincus, Griffith, Pearce, & Isenberg, 1996). Weiner (1975) described RA patients as being "haunted" by uncertainty, hoping for extended periods of remission while at the same time cognisant of likely deterioration. Weiner (1975) identified six anxiety enhancing factors: disease symptomatology (e.g. pain, swelling, stiffness); body site involvement; disability; gradual or sudden onset; duration; and frequency of flares.

Despite the fact that the majority of people with arthritis cope extremely well with their condition, most psychosocial rheumatology research has focused on depression, particularly within the context of RA (Katz & Yelin, 1993; Creed & Ash, 1992). Although the exact prevalence of depression in RA is unknown, estimates generally fall within the 15% to 20% range (Katz & Yelin, 1993).

Parker & Wright (1995) stress that when referring to depression in arthritis, it is important to recognise the distinction between the lay usage of depression and the medical usage of the term. Lay usage refers to the sadness and gloom that accompanies the vicissitude of everyday life. Medical usage refers to a chronic or profound depressed state that lasts often for a duration of two years or more.

Hawley & Wolfe (1993) conducted a 10-year longitudinal survey of consecutive patients with rheumatic disease attending outpatient clinics in order to determine if depression scores and depressive symptoms are greater in patients with RA. They found no evidence for increased depression in patients with RA compared to patients with other types of rheumatic disease (e.g. OA, low back pain, fibromyalgia, ankylosing spondylitis, scleroderma, systemic lupus erythematosus). In fact, depression scores were highest among those with fibromyalgia.

In a review of the literature on the prevalence of depression in arthritis, DeVellis (1995) concluded that, although depressive symptoms are more prevalent among people with arthritis than people without serious chronic conditions, such increased prevalence rates were similar to those found among other chronic conditions such as diabetes, heart disease, high blood pressure and chronic lung disease. In light of these findings, DeVellis stresses that it is only a 'significant minority' of people with arthritis who suffer from depressive disorders. In contrast, Cassileth, Kessler, Strouse, et al. (1984) suggest that depression among chronic illness patients is similar to that for the general population and reflects differences in ability to cope with stress in general, rather than the demands of the disease. Inconsistent findings may be partly accounted for by measurement problems. Some depression scales suffer from 'criterion contamination' as certain scale items (e.g., fatigue, sleep disturbances, unable to perform daily activities) intended to assess depressive symptoms are similar to problems which are disease-related (Pincus et al., 1996). Such scales would obviously inflate depression scores in arthritis patients.

Disability (Berkman et al., 1986) and chronic pain (Turner & Noh, 1988) are associated with depression. The causal effects between chronic pain and depression appear to be reciprocal, although the most usual pattern seems to be that chronic pain precedes depression. Some researchers have provided tentative support for pain predicting depression (Brown, 1990), whereas others have found depression to exert more influence over pain (Romano & Turner, 1985). Depressive symptoms have been found among elderly people with OA (Dexter & Brandt, 1994), although higher levels of depression were evident only among those who were receiving medical care. Research examining depression in arthritis has been criticised for using convenience samples of in-patients in clinical settings. Consequently, they do not depict an accurate reflection of the prevalence of depression among community-dwelling persons with rheumatic disease.

With respect to the relationship between disease severity and depression, inconsistencies have been found. Some studies have suggested an association between greater disease severity and depression (Blalock, DeVellis, DeVellis, & Sauter, 1988) whereas others have found no such relationships (Hawley & Wolfe, 1988).

Despite noting declines in physical functioning associated with age and the presence of a chronic disease including OA. Singer et al. (1999) found no evidence of a corresponding decline in mental health and suggests that many elderly people with chronic illnesses learn to adjust and cope with disability-related problems.

The poor HRQL of some UK former players with OA has been reported anecdotally in the media. One player told of being unable to lift himself out of an armchair because of the pain in his badly inflamed knees (White, 1997). Another former player spoke of his concern of not being able to walk in the future as a result of the legacy of six operations (Ward, 1998). This former player also told of how he lost his coaching position because of his health problems and of the curtailment of leisure activities such as playing indoor football, squash and golf.

There is a growing literature on masculinity and health (Gray, Fitch, Phillips, Labrecque, & Fergus, 2000) but as yet no studies have focused on the experience of men living with OA. Only one qualitative study has investigated how ex-athletes cope with OA (Keysor, Sparling, & Riegger-Krugh, 1998). However, the sample comprised American athletes who were not performing at an elite level and three of the four participants were female and so was unable to capture the elite male perspective. Common themes to emerge were pain, fear, isolation, helplessness and loss of function (Keysor et al., 1998). Personal accounts of chronic illness have largely been ignored by health psychologists; rather this area has been investigated by medical sociologists (Smith, 1996). Williams (1984) and Anderson & Bury (1988) have published accounts of the experiences of living with rheumatoid arthritis (RA), but as yet little OA qualitative research exists and the extant literature mainly focuses on the experiences of women (e.g. Downe-Wamboldt, 1991; Hampson, Glasgow, & Zeiss,1994).

In a study by Adams (1987) none of the 15 ex-professional footballers who were clinically diagnosed with OA reported disruptions to normal activities. However, no other quality of life dimensions were assessed and activity disruption was not measured with a standardised measure.

2.7 MANAGING OA AND CHRONIC PAIN: A PSYCHOSOCIAL PERSPECTIVE

Although having a chronic condition such as OA presents the individual with numerous challenges, it is pain symptoms which are appraised as the most stressful and less controllable (Downe-Wambolt, 1991; Giorgino, Blalock, DeVellis, Devellis, Keefe, & Jordan, 1994), and therefore which require greater adaptation and coping .

Coping classifications

One of the earliest coping measures was Folkman and Lazarus's (1988) empirically based Ways of Coping Questionnaire (WOCQ). The authors identified both problem-focused coping (i.e. dealing with the stressor) and emotion-focused coping (i.e. dealing with emotions associated with stressor). Folkman and Lazarus found that, although most stressors elicit both types of coping, problem-focused coping tends to predominate, and is adaptive, when people feel that something active can be done, whereas emotion-focused coping tends to predominate, and is adaptive, when people feel the stressor is something that has to be endured - *the goodness of fit hypothesis* (Vitaliano, De Wolfe, Maiuro, Russo, & Katon, 1990)

Carver, Scheier, & Weintraub, (1989) cite the distinction between problem-focused and emotion-focused as an important one, but one that is too simple. They believe that both coping strategies have to be subdivided because there are a variety of ways to solve problems or to regulate emotions. The authors note that studies using the WOCQ have found several factors rather than just two. Additionally, problem-focused and emotion-focused coping involve strategies which are diverse and diametrically opposed, such as the emotion-focused strategies of denial and acceptance (Carver et al., 1989). Some authors have suggested that specific coping strategies, rather than higher order categorisation (i.e. problem/active vs emotion/passive), are more informative for describing how individuals cope with specific disease-related stressors (Jensen, Turner, & Romano, 1992). Jensen et al. (1992) found that individual coping scores rather than composite scores were more use for identifying the conditions under which coping efforts have their greatest effects on adjustment. Carver et al. (1989) employed a theoretical framework to develop a multidimensional coping questionnaire (COPE) to assess the different ways in which people cope with stress. They initially developed 13 conceptually distinct 4-item scales, later revised to 15 scales. The authors have recently developed a shortened version comprising 14, 2-item scales

(Carver, 1997). Subtle alteration of the format enables an examination of either dispositional or situational coping.

The original COPE comprised five scales which measure conceptually distinct aspects of active coping, five scales which measure emotion-focused coping and three scales which measure venting emotions, behavioural disengagement and emotional disengagement. Carver et al. (1989) categorised strategies into adaptive and maladaptive responses. They suggest that people use a wide range of coping strategies and found that if a stressful situation is amenable to change they tended to use active coping, planning, suppression of competing activities or seeking instrumental social support . If the situation was not amenable to change, they tended to use both denial and acceptance. Zeidner (1994) suggests that coping strategies should not be classified as adaptive or maladaptive. Instead, contextual factors should be considered as the same coping strategy may well have both adaptive and maladaptive consequences. For instance, denial can be adaptive in the early stages of pain, helping the individual to assimilate gradually the severity of their problems, without becoming depressed or despondent. However, if denial were to continue, then it is possible that coping attempts would not be undertaken, possibly leading to worsening symptoms.

The pain coping literature contains a vast and sometimes confusing array of strategies people use when coping with chronic pain (see Table 2.4). According to Maes, Leventhal, & De Ridder (1996) many of these strategies are poorly defined. Some researchers have used different names to describe what appear to be the same strategy, whereas others have used the same name to refer to two seemingly different strategies. As already mentioned, one common method of classification distinguishes between problem-focused and emotion-focused. Another system of classification is to categorise coping strategies as either cognitive or behavioural. Cognitive strategies include attempts to manage pain through techniques such as distraction and imagery. Behavioural strategies refer to actions such as taking medications, exercising and resting. Within these broad classification systems, coping strategies can be classified as either active or passive. Active and passive classifications are often erroneously used interchangeably with problem-focused and emotion-focused classifications. Brown & Nicassio (1987) consider active strategies to involve efforts to deal with pain and carry on in spite of it (e.g. distraction and participating in leisure and/or social activities), whereas passive coping would entail an avoidance of pain (e.g. taking medication, wishful thinking and activity restriction). The distinction between active and passive coping has been criticised on conceptual grounds (Keefe, Salley, & Lefebvre, 1992). It is easy to see where the confusion in coping classification arises when one considers the example of taking medication, which some researchers describe as a passive coping strategy. One patient could search the Internet for information about the latest pain-relieving drugs and then use this information to request a change in medication. Another patient might go along to their doctor for a routine check-up and be prescribed what the doctor thinks to be a more efficacious painkiller. The first patient's actions could be described as an active behavioural attempt at coping with pain, whereas the second patient's coping attempt is essentially passive. Finally, some researchers further classify coping attempts according to whether they are attentional (e.g. exercise) or avoidant (e.g. denial, activity restriction.) Although conceptualising coping in terms of specific methods provides a useful taxonomy for describing coping, operationally it is often difficult to distinguish between methods.

Table 2.4. Pain-coping strategies classified according to two frequently used dimensions

	Cognitive	Behavioural
Attentional	Catastrophising	Hypnosis
	Praying/hoping	Operant conditioning
	Imagery	Modelling
	Stress inoculation	Exercise
	Self-statements	Attention seeking
	Reappraisal	Emotional expression
	Self-blame	Information seeking
	Focus on pain	Social support seeking
	Rationalization	Increased pain behaviour
Avoidant	Diverting attention	Resting/relaxation
	Ignoring pain sensations	Taking medication
	Distancing	Reading/watching television
	Denial	Leisure activities
	Wishful thinking	Restricting activities
	Threat minimization	Increasing activities
	Dissociation	Keeping busy
	Suppression	Isolation

From Katz, Irvine, & Jackson (1996).

A simple and effective way of coping with pain is through cognitive and/or behavioural strategies that divert attention away from pain to some other activity, object or event. The scope of attention-diverting coping is extensive and can include direct intentional efforts to reduce pain such as relaxation and guided imagery, as well as indirect approaches such as watching television and reading. Attention diversion coping is effective for many reasons and it appears that multiple mechanisms are involved. For example, activities that require sustained, focused attention may actually reduce pain intensity, as well as pain awareness, by decreasing sympathetic nervous activity (Katz, 1993). Engaging in mood enhancing distracting social activities may alter the use of maladaptive coping strategies such as catastrophising and avoidance. Socialising with others may also have the effect of reducing emphasis of the importance of pain. (Katz, 1993).

Hampson et al. (1996) found that OA patients who appraised pain as more intense used more passive coping strategies (e.g. wish fulfilling fantasy). Passive coping and active coping were predictive of more negative mood and less negative mood respectively at 4 months followup. A Review of the RA and coping literature by Zautra & Manne (1992) concluded that passive coping is generally associated with poorer physical and psychological health, whereas active coping is associated with better outcomes.

Jensen et al. (1991) reviewed twenty-nine studies which examined the relationship between pain coping strategies and physical and psychological adjustment. Studies using the Vanderbildt Pain Management Inventory (VMPI, Brown & Nicassio, 1987) showed that active and passive coping were associated with lower and higher levels of pain and depression respectively (Brown & Nicassio, 1987; Brown, Nicassio, & Wallston, 1989). Interestingly, one of these studies (Brown et al., 1989), reported a moderating influence of pain level on the relationship between coping and depression. Passive coping was positively related with depression only among patients with high levels of pain. Studies using the Coping Strategies Questionnaires (CSQ, Rosenstiel & Keefe,1983) reported mixed results, with some studies finding a relationship between choice of coping strategy and adjustment and others finding no such relationship. Other studies found a moderating influence of pain severity on the relationship between coping and activity level (Jensen, & Karoly, (1991). Diverting attention, ignoring pain and coping self-statements were all positively associated with activity level but only for patients with low pain levels.

There was greater consistency for CSQ subscales of pain control appraisals and catastrophising, which were negatively and positively related to adjustment respectively. The tendency to catastrophize, a cognitive process defined by negative self-statements and negative beliefs about the future, has been associated with poorer outcomes including the presence of back pain, (Reesor, & Craig, 1988) and psychosocial dysfunction (Jensen et al., 1992). Studies using the revised WOCQ - the Ways of Coping Checklist (WCCL), which is a generic rather than pain specific measure, found greater use of Wish-fulfilling Fantasy to be consistently associated with lower levels of positive affect and physical functioning (Felton, Revenson, & Hinrichsen, 1984); Manne, & Zautra, 1990).

Chronic pain gives people many opportunities to draw conclusions about how their situation compares to that of others (social comparison), and to use their own state at an earlier time as a comparison target (temporal comparison) (Tennen & Affleck, 1997). Downward comparisons afford an opportunity to gain solace from knowing that there are others worse off, but they can also warn of possible worse health states and can thus increase negative affect. Upward comparisons can similarly influence positive and negative affect. Realising that there are others that are better off can inspire hope and increase motivation to improve, but it can also serve to reinforce feelings of worthlessness and despair. Tennen & Affleck (1997) have linked the phenomenon of downward comparison with other emotion-focused coping strategies such as positive reappraisal. Wills (1987) argued that downward comparisons are not only adaptive, but also common among people facing threatening events. The ubiquity of downward comparisons was highlighted by Affleck, Tennen, Urrows, Higgins, & Abeles (2000) who reported use of this coping strategy among women with chronic pain to be comparable to the more common pain coping strategies assessed in the stress and coping literature (e.g. Affleck, Urrows, Tennen, & Higgins, 1992) such as relaxation, distraction, and seeking emotional support. Affleck et al. (1992) found that RA patients made more downward, temporal comparisons than they did downward, social comparisons. Interestingly, those who made downward, temporal comparisons in describing their illness reported less pain and morning stiffness, joint swelling and disease activity. Affleck et al. (1992) suggest that downward temporal comparisons may be more helpful than downward social comparisons because they do not involve *the "moral ambivalence of comparing oneself to less fortunate others".* Affleck et al. (2000) similarly found evidence of more downward temporal comparisons compared to downward social comparisons. Jensen & Karoly (1991) found that pain duration moderated the inverse relationship between social comparison and depression. The relationship was only significant for patients who had experienced pain of up to 11.7 years.

Watkins, Shiffren, Park, & Morrell (1999) found that among RA patients, pain severity (mild vs severe) was associated with the differential use of coping strategies. In general, people with severe pain tended to use more maladaptive coping strategies such as catastrophising and praying/hoping, whereas persons with mild pain tended to use adaptive coping strategies of coping self-statements (see pain as a challenge, pain is something to overcome) ignoring pain sensations and reinterpreting pain symptoms. The authors suggest that the differential use of coping strategies reflects the relationship of pain severity to perceived control over symptoms. Catastrophising may reflect the hopelessness associated with the experience of chronic, severe pain. For persons with severe pain, depression was predicted by an increased use of catastrophising. Hopman-Rock, Kraaimaat, Odding, & Bijlsma (1998) found that the most frequent pain coping strategies used by elderly people with OA-related knee or hip pain were comforting (worrying about pain) and distraction (participating in pleasant activities such as taking a bath, reading, relaxation etc). Although comforting was widely used, it was not considered to be a useful coping method compared to distraction, which was considered to be the coping method most influential at reducing pain. Compared to people with sporadic or episodic pain, people with chronic pain tended to use the pain coping strategies of resting and reducing demands more often. Avoidance coping, such as withdrawal and inactivity, may be helpful in reducing pain during the early stages of recovery following injury and also prevent further injury. However, in the long-term it has been associated with poorer psychosocial and physical outcomes (Katz et al., 1996).

In a recent study among chronic pain patients, Endler, Corace, Summerfeldt, Johnson, & Rothbart (2003) used two coping measures to assess the relationships between pain, coping and psychological distress. The measures used were used the Coping Inventory for Stressful Situations (CISS: 5 subscales: task-oriented; emotion-oriented; avoidance-oriented; distraction; social diversion) and the health specific Coping with Health Injuries and Problems (CHIP: 4 subscales: distraction; palliative; emotional preoccupation; instrumental). Results showed that anxiety and depression were positively associated with pain. Scores from both measures showed that patients tended to use more active coping strategies (e.g. instrumental (CHIP) and task-oriented (CISS). In general, greater use of emotion- focused, palliative and avoidant coping strategies were associated with more pain, anxiety and depression. An unexpected finding was that the CHIP subscale instrumental coping was also positively associated with pain and anxiety. No coping strategy was significantly associated with less pain or anxiety. The greater use of the CISS task-oriented subscale was associated with lower depression.

2.8 CHAPTER SUMMARY

Professional football is an occupation which carries a high risk of injury. It is clear that professional footballers are socialised into accepting pain, injury and the significant risk of disability as an integral part of their career. Also there is growing evidence from the general health literature, which has traditionally comprised mainly female patients, that OA and chronic pain require a coping response which may mitigate or worsen psychological distress. In general, the greater use of active coping is associated with better adjustment, but this is not always the case and it may be that this relationship is dependent upon a number of factors such as pain severity and perceived pain control. There are no large-scale studies documenting either the level or impact of OA and chronic pain among ex-professional footballers in the UK and thus this research programme represents the first systematic, comprehensive attempt to see if this is the case.

CHAPTER 3.0 METHODOLOGY & METHODS

3.1 OVERVIEW

This Chapter will discuss the methodological approach adopted in this study. Psychosocial aspects of chronic disease have been researched adopting either quantitative or qualitative methodologies. The strengths and weaknesses of quantitative (3.2 to 3.4) and qualitative methodologies (3.5 to 3.6) are outlined. The merits of using a combined approach are then described (3.7). Finally, justification of the adoption of a combined rather than single methodology regarding data in this study will be presented (3.8).

3.2 QUANTITATIVE METHODOLOGIES

Empiricist, quantitative designs assume that human behaviour can be explained by what have been described as "social facts", which can be investigated by methodologies that adopt the deductive logic of the natural sciences. This positivist approach to science has dominated psychology since its establishment (Murray,1997). This approach assumes that the researcher is able to gain access to a pre-existing reality, which operates according to natural laws (Murray & Chamberlain, 1998). The method followed is the careful operationalisation and measurement of psychological variables using valid and reliable measures. The belief in the natural science model is predicated upon the presence of established methods for conducting quantitative analysis (e.g. representative sample sizes, valid and reliable measures, controlling for confounding variables and appropriate statistical analysis) (Yardley, 2000), which has contributed to the disparagement of other forms of investigation as non-scientific.

Quantitative studies tend to measure properties of a variable in terms of "how much" or "how often". This type of design permits flexibility in the treatment of data, in terms of comparative analyses, statistical analyses and repeatability of data collection in order to establish reliability (Sim & Wright, 2000). However, Jones (1997) has argued that more practical concerns are at the root of academic arguments in favour of quantitative designs. Specifically, he highlights that the advantages of large-scale data collection and analysis are the affordable cost and effort, especially where resources are limited as is often the case.

One of the primary objectives of sampling is to obtain a random, representative sample, that is, one that "accurately reflects its population" (de Vaus, 1991, p60.). This permits generalisations about large populations to be derived from much smaller representative samples. However, as Sim & Wright (2000) point out, a larger sample size provides a more precise estimate of the population from which it is drawn. A truly representative sample is difficult to attain due to a number of factors, which remain outside the control of the researcher such as refusals and ethical concerns (Bowling,1997). These types of problems have led one author to assert that the true random sample is a research myth, and if research was dependent on random selection then very little research would be conducted (Bowling, 1997).

There are two broad types of sampling, these being probability (simple random sampling, systematic sampling, stratified sampling) and non-probability (purposive sampling, convenience sampling quota sampling, snowball sampling) (de Vaus, 1991). A probability sample reflects the assumption that each member of the population has an equal chance of being selected, whereas in a non-probability sample some members have a greater but unknown chance of being selected (de Vaus, 1991). Often time and resources constraints dictate that a convenience sample is used (Sim & Wright, 2000). Many convenience samples are composed of volunteers, rather than individuals whom the researcher has specifically approached for inclusion in the study. Unfortunately, this can introduce a serious self-selection bias (Sim & Wright, 2000).

3.3 SURVEY METHODS

The principle methods associated with the quantitative tradition in social research are questionnaires and structured interviews (Sim & Wright, 2000). In health psychology research, questionnaires often comprise of one or more scales, which measure the variable of interest. Often the scales selected will have established psychometric properties and these provide valid and reliable data. A valid measure is one which measures what it purports to measure and can be assessed along a number of dimensions including face validity, content validity and criterion validity (Sim & Wright, 2000). So for instance, a valid pain severity measure (e.g. Arthritis Impact Measurement Scale) will contain items which seem relevant to the respondent and which appear to measure pain (face validity), which tap into the full range (e.g. sensory, affective, cognitive, behavioural) of the respondent's pain experience (content validity) and one in which the scores are consistent with another pain measure (e.g. Coping Strategies Questionnaire, Rosentiel & Keefe,1983) with already established validity (concurrent validity). A measure cannot be valid unless it is reliable (Sim & Wright, 2000). A reliable measure is one which is internally consistent or one which produces the same data on repeated occasions, that is, of course, if it is not anticipated that the variable being measured should change. For instance, a person's depression scores would be expected to change after receiving a therapeutic intervention. Methods of assessing reliability include repeated administration of a measure (test-retest method).

3.4 POSTAL QUESTIONNAIRES

The self-completed postal questionnaire is one of the most popular quantitative data collection techniques. Its popularity is accounted for by the relatively low cost involved, ability to access large numbers of respondents on a nationwide basis and its ease of administration (Sim & Wright, 2000). When used in combination with psychometrically robust measures, postal questionnaires can produce data suitable for a number of purposes including testing hypotheses and inferring causality. However, there are a number of problems that beset this type of data collection including, low response rates, biased samples and missing and/or incomprehensible data. Attention to the design of the survey and adequate piloting of the survey can help minimise some of these problems. Care must be taken with respect to content, layout, order and wording. Dillman (1978) suggests that once a questionnaire length exceeds 12 pages or 125 items, response rates drop. de Vaus (1991), however, suggests that when the questionnaire is considered relevant and targeted at a specialist audience, concerns over questionnaire length are less important. The role of self-report questionnaires in accurately reporting health status has been questioned. However, there is some evidence supporting the validity of self-reported health status and symptoms (Friedsam & Martin, 1963). In one study, there was a high degree of concordance between self (patient)- and observer (doctor) -assessed presence and severity of colds (Macintyre & Pritchard, 1989).

3.5 QUALITATIVE METHODOLOGIES

Murray & Chamberlain (1998) suggest that within the discipline of psychology there has been a shift of emphasis away from the positivist quantitative methods which have so far dominated. There has been strong criticism of the adequacy of quantitative methods from critical, social constructionist and feminist researchers who have introduced concerns regarding the nature of reality and research methods (Murray & Chamberlain, 1998). These critiques have prompted a variety of postmodern research methods and forms of analysis which come under the umbrella term of qualitative research.

The limitations of quantitative approaches lie mainly in their inability to ascertain deeper underlying meanings and explanations of the phenomenon under investigation (Jones, 1997). Qualitative research designs are those that are associated with interpretative approaches, from the informants' point of view, rather than measuring discrete, observable behaviour (Jones, 1997). Qualitative methodologies achieve a deep, rather than a broad knowledge about a particular phenomenon. Qualitative methodologies also permit the informant to introduce concepts of importance, as opposed to being restricted to areas deemed important by the researcher. Qualitative research is an inductive approach which enables the wholeness and complexity of the phenomenon to be studied and represented rather that trying to place people's experience into predetermined categories derived from existing theory.

The limitations of using a qualitative approach are often centred upon objectivity, validity, generalisibility of findings, sampling techniques and sample size. Because of considerations of time and resources, qualitative studies are usually based on small unrepresentative samples. Krueger (1998) argues that qualitative research is not intended to generalise, rather, it is employed in order to generate rich meaningful insights and greater understanding of the topic under investigation. Thus the 'quality' of qualitative research is not dependent upon sample size. A large, representative sample size undermines the rationale for employing qualitative methods because of the vast amounts of data produced, which lend themselves to only superficial analysis (Yardley, 2000). Further, in some instances the focus of the study may be best served by researching individual cases (Hammersley, 1996). In addition, theoretical inference, as opposed to empirical generalisation, defines the purpose of some qualitative studies. Nor should small samples be considered a problem when making empirical generalisations, particularly when the population is homogeneous in important respects (Hammersley, 1996).

Objectivity can be questioned in any research design, not just those which are qualitative in nature. As Charmaz (1990) notes, all research is to some extent or another, influenced by the researcher's experiences, values and priorities. Similarly, validity is a concern for all research methodologies. For example, in a postal survey it is extremely difficult for the researcher to ensure that questions are understood uniformly by all respondents and that the replies have the same meanings for all respondents. A number of methods have been developed which attempt to address the issue of validity in qualitative research including inviting participants to check the researcher's analysis and giving them the opportunity to confirm, clarify or refute the findings. Method and researcher triangulation (Finlay, 1999) offer other guards against bias by establishing consistency and therefore the credibility of findings. Method triangulation refers to the use of two or more methods of data collection within a project. Researcher triangulation involves two or more researchers conducting the analysis.

Examples of qualitative research methods include, observation, focus groups, analysis of documents, semi-structured and unstructured interviews. Semi-structured and unstructured interviews are the mainstay of qualitative chronic illness research (Anderson & Bury, 1988; Strauss, 1975) and have been used in the field of arthritis research (Weiner, 1975; Bury, 1988; Locker, 1983). According to Quandt & Arcury (1997) although there is a dearth of qualitative methods in arthritis research there is a burgeoning interest in utilizing this type of approach to explore and understand the impact that the disease has on people's lives and how they cope. Some of the common differences between qualitative and quantitative research are presented in Table 3.

Table 3. Common differences between qualitative and quantitative research.

	QUALITATIVE RESEARCH	QUANTITATIVE RESEARCH
Research Question	What? Why? (Classification, Meaning)	How many? Strength of association? (Enumeration, Causation)
Approach	Flexible: natural setting (process oriented)	Highly controlled: experimental setting (outcome oriented)
Reasoning	Inductive	Deductive
Hypotheses	Generation	Testing
Sampling	Purposive (evolving)	Statistical (predetermined)
Measurement	Researcher as instrument ("insider view")	Psychosocial/Physiological instruments ("outsider view")
Data Reduction	Words/Categories/Themes	Numerical (statistical)
Data Analysis	Coding/Categorizing/Comparing	Statistical inference/Statistical estimation

3.6 THE INTERVIEW METHOD

Interviewing as a method of inquiry is commonplace in the social sciences and interviews are the mainstay of qualitative research (Murray & Chamberlain, 1998). There are a multitude of interview techniques available to the researcher and the nature of the topic, the researcher's epistemological and philosophical perspective, and more practical concerns, such as access to respondents and resources, will determine which one is most appropriate. Perhaps the most familiar and most commonly used technique is the structured interview where the wording and order of questions remain invariant across interviews. The use of structured interviews assumes that the researcher has some existing knowledge about the research topic. Perhaps the most familiar example of this type of method of data collection is the ubiquitous market research interview. Respondents' attitudes, opinions and consumer behaviour are 'scientifically' measured and reduced to a numerical score which can then explain a cause-and-effect relationship and/or predict some future purchasing behaviour.

Kidder & Fine (1997) consider only unstructured interviews capable of uncovering people's experiences and views in their own words. Unstructured interviews are concerned with trying to understand how a respondent thinks and feels about the topic. It is essentially a non-directive approach, allowing the respondent to introduce concepts and ideas which have personal relevance. In many cases this approach draws the researcher's attention to previously neglected or unnoticed material (Wilkinson, 1998). An advantage of unstructured interviews is that in the absence of any pre-determined hypotheses or questions, a broad line of inquiry can be explored arising from the interaction between researcher and respondent. Unstructured interviews may also be used as an exploratory technique to generate hypotheses meriting further qualitative or quantitative research (Wilkinson, 1998).

The difficulty, particularly for novice researchers, to conduct an interview without any structure has been acknowledged (Mathieson & Stam, 1995). Semi-structured interviews are a response to this problem. Semi-structured interviews orient the participant towards the research question, permit some measure of standardisation between interviews, and allow the researcher to explore salient issues with each participant. The method is also sufficiently flexible to allow the researcher to validate and clarify meanings with participants or explore new topics (Smith, 1996). Practical considerations such as time constraints may also dictate that the interview process involves some selectivity. An interview guide can also help in cases where a respondent is reticent to self-disclose. Lowes & Prowse (2001) reported some of the benefits of using and interview guide during their phenomenological research:

> "...participants welcomed some guidance on what to talk about. The guidance contributed to the generation of data that helped the research questions and made the best use of resources such as participant and researcher time." (Lowes & Prowse, 2001, p475)

Ideally, the decision to use unstructured or semi-structured interviews should be based on philosophical and epistemological considerations. But as Hammersley (1996) notes:

> "The decisions that have to be taken in research necessarily rely heavily upon a variety of practical considerations regarding the particular goals of the research, the resources available, the obstacles faced, and so on."

The researcher's role within the qualitative research process needs to be recognised as the researcher often becomes "an instrument of the research" with findings becoming a reflection of what the researcher wants to see (Maxwell,1996). However, researcher bias can be said to be inherent within all research methods. In fact, by giving research participants the opportunity to voice their experiences and ask questions about the research process, qualitative methods make considerable moves towards equalising the research relationship Lowes & Prowse (2001). Equally, it is important to recognise that although researcher bias can hinder the researcher process, it can also facilitate it, a point taken up by Sandelowski (1986):

> "Engagement with rather than detachment from the things to be known is sought in the interests of truth. Qualitative researchers acknowledge the complexities of this kind of involvement with subjects but view the benefits of it as far outweighing the liabilities."

Personal characteristics of the researcher (e.g. age, ethnicity, gender, social class) have been noted as potential sources of bias affecting reliability and validity (de Vaus, 1991). These sources of bias are prevalent in both unstructured and structured interviews, but while they are acknowledged and embraced in the former format they are considered unacceptable and minimised in the latter (Fielding, 1993). Further threats to reliability and validity can occur when the respondent distorts social reality or conceals information (Fielding, 1993). However, unstructured interviews are less affected by this type of deliberate fabrication than structured interviews (Fielding,1993).

A number of authors have addressed some of the of key issues facing the researcher who is thinking of undertaking unstructured interviews. Reinharz (1992) proposes that the respondents' characteristics will determine whether the researcher emphasises his or her professional status. Oakley (1993) suggests that the researcher should strive for intimacy and display openness. Developing trust, warmth and empathy are considered prerequisites of the successful interview in order to facilitate a frank and genuine response, but not all authors agree. For instance, Hammersley & Atkinson (1983) suggest that there has to be a degree of social and intellectual distance to aid analysis. Taylor & Bogdan (1975) propose a "happy medium between total self-disclosure and total detachment". Summarising from her own experiences of interviewing, King (1996) suggests that there should be no rigid rules governing interviews, instead the focus should vary according to the nature of the topic being studied and the personal characteristics of the respondent.

It is recommended that interviews are recorded on tape and transcribed verbatim, rather than the researcher making hand-written notes, as this ensures that everything the respondent says is subsequently available for analysis. Even the most proficient note-taker misses critical material. In addition, the transcription can be verified by another researcher for omissions, distortions or errors (Oppenheim, 1992). Evidence from a study which compared written notes taken from a psychiatric interview with a full transcription of the same interview emphasises the fallibility of note-taking.

> "At times, recorded interviews elicited responses of startle and surprise, as though the therapist had not previously been in the actual situation..." (Brody et al., 1951)

Qualitative data of the sort derived from unstructured and semi-structured interviews rely exclusively on the researcher's analysis and interpretation and therefore places a great responsibility and burden on the researcher's expertise (or lack thereof). When conducting quantitative analysis the person responsible (commonly a statistician) can be divorced from the collection and interpretation of the data, but because of the complex and rich nature of qualitative data it is usually necessary that the same person (s) is involved in all stages of the study. The kind of data derived from qualitative interviews can be analysed in a variety of ways with researchers employing a particular method which supports their own methodological assumptions concerning the nature and construction of knowledge (e.g., social constructionist, feminist).

3.7 COMBINED APPROACH

The strengths of one approach potentially complement the weaknesses of the other, and vice versa. The choice of research design must be appropriate to the topic being investigated (Kavale, 1996). The use of a combined methods approach in this study will draw on the strengths of both quantitative and qualitative approaches. This approach has been used effectively in arthritis studies in the UK (e.g. Barlow et al., 1997). Quantitative and qualitative approaches are often viewed as oppositional (Mays & Pope, 1995). However, the dichotomy between these approaches is being increasingly rejected by authors who choose to view them as complementary, rather than exclusive (Mays & Pope, 1995).

There are several ways in which qualitative and quantitative approaches can be combined. For example, adopting a sequential manner, researchers might use qualitative methods (e.g. focus group discussions, and/or in-depth interviews) to obtain a thorough understanding of the topic under investigation, perhaps leading to hypothesis or theory development. Next they might develop a measurement tool that integrates the qualitative findings. Finally, hypotheses derived from the qualitative work can be tested using the measurement tool among a large representative sample.

Another approach, which is particularly useful where there is limited research, is to commence with a quantitative, large-scale survey to establish first of all how serious and/or widespread the topic under investigation is. Once established, the research process might then follow the same stages as described above. It is this approach which is adopted in this thesis and described more fully below.

3.8 DATA COLLECTION METHODS USED IN THIS THESIS

Phase I quantitative data collection

The merits of a quantitative approach can be seen from the studies conducted by Klunder et al. (1980) and Lindberg et al. (1993) which established the prevalence and statistically significantly higher risk of OA among Scandinavian ex-footballers. Another advantage of a quantitative research design is that it permits a more "objective" analysis. So, for instance, standardised OA impact scales can be tested for validity and reliability, thus lending claims to further "scientific" credibility. An example of this would be the development of the EuroQol scale among arthritis populations (Hurst et al., 1997). As noted in the background literature, there are limited data on OA among professional footballers in the UK. Therefore the aims of Phase I of this thesis are to examine the short and long-term consequences of playing professional football in the UK. The latter aim will be achieved through the use of standardised, psychological and HRQL measures. A large scale, postal survey afforded the most effective and economical method of achieving this aim. The development, content and administration of the survey are described in Chapter 4.

Phase II qualitative data collection

The aim of this study was to investigate the experience of living with OA and pain from the perspective of ex-professional footballers. If, as Smith (1996) has suggested, living with chronic illness contains psychological, as well as sociological, dimensions, then the emphasis should be upon gaining multiple understandings of how the informants view their own particular situation. It is recognised that the "subtleties" and "personal meanings" inherent in chronic illness are best investigated using qualitative methods (Conrad, 1990; Gerhardt, 1990).

A subsample of survey respondents will be interviewed to gain "rich", descriptive data. The primary focus of the interviews will be to describe, from the respondent's perspective, the changes experienced as a result of their OA and how they cope with these changes. Telephone interviews were necessary in Phase II because of the geographical dispersion of the participants which would have resulted in a financial burden. There are obvious limitations of telephone interviews compared to face-to-face interviews for establishing and maintaining rapport between interviewer and respondent. A further limitation of telephone interviews is the inability to attend to the interviewees' facial and bodily gestures. Non-verbal communication may indicate the strength and depth of feelings accompanying verbal statements, which can provide a context for subsequent analysis (Kavale, 1996).

The interview data will be analysed using interpretative phenomenological analysis (IPA) (Smith,1996). Smith (1996) has argued that IPA and health psychology form a "useful alliance" A number of studies using IPA within the health psychology field have been published (e.g. Osborn & Smith, 1998; Schur, Gamsu, & Barley, 1999). The aim of IPA is to explore in detail the participants' view of the phenomenon under investigation. Thus, the approach is phenomenological in that it acknowledges that participants provide meaning to their experiences (Smith,1996). IPA adopts a 'middle approach' between social cognitive models which have a strong commitment to quantification and establishing a relationship between beliefs, attitudes and behaviours, and discourse analysis (DA), which argues that what people say and how they say it depends upon the situation they find themselves in (Smith, 1996). Discourse analysts regard verbal reports as behaviours in their own right and challenge the assumption that verbal reports reflect underlying cognitions (Potter & Wetherell, 1987). IPA is essentially an attempt to gain an "insider's perspective" (Conrad, 1987), while acknowledging that this cannot be achieved completely. It has a commitment to cognitions by acknowledging that what a person says has some ongoing significance and reality for them beyond the bounds of the interview situation (Smith, 1996). IPA further acknowledges that access to meaning is achieved by the researcher through an interpretative analysis of the participants' personal accounts, which are based on the researcher's own experiences and with reference to the extant literature (Smith, 1996). Smith's (1996) definition of IPA clearly describes its purpose as an analytical tool:

> "...the approach is phenomenological in that it is concerned with an individual's personal perception or account of an object or an event as opposed to an attempt to produce an objective statement of the event itself. Access to the participant's world] depends on, and is complicated by, the researcher's own conceptions and indeed these are required in order to make sense of the other personal world through a process of interpretative activity. Hence the term interpretative phenomenological analysis is used to signal these two facets of the approach." (Smith, 1996).

Implicit in the quote above is the emphasis placed upon the researcher to be aware of his/her beliefs and biases about the phenomenon under investigation. The issue of researcher objectivity is a contentious one among phenomenological researchers. The philosophy of Edmund Husserl, acknowledged as the founding father of the phenomenological movement, believed that the researcher's preconceptions or beliefs should be examined and suspended ('bracketing' or 'eopche') before commencing the research process. With these biases suspended it is assumed that research objectivity is increased and the interview and analysis is free from contamination. In contrast, Heideggerian phenomenology acknowledges prior understanding on the part of the researcher, refuting the Husserlian belief that it is possible for researchers to 'bracket' beliefs. Heideggerian researchers acknowledge that they can only interpret something according to their own beliefs, experiences, and pre-conceptions, which are a legitimate part of the research process and should not be left out.

Smith (1996) suggests several criteria to assess the internal validity and reliability of IPA research. Two important ones are internal coherence and presentation of evidence. The former refers to the need to determine whether the argument presented in the study is internally consistent and justified by the data and the latter is whether sufficient verbatim evidence (quotes) is presented to allow the reader to interrogate the researcher's interpretation. Osborn & Smith (1998) define internal coherence as the "...need to concentrate on whether the analysis presented is internally consistent as justified by the data" (p68). Throughout the analysis process the researcher revisits the data in order to remain faithful to them. The researcher's interpretation must not go beyond what is said by the participants.

Detailed description of the interview schedule design, recruitment and administration is presented in Chapter 5.

Phase III data collection

The data from the interviews were used to inform the design of a questionnaire which was used to investigate quantitatively the relationship between pain, pain coping and psychosocial distress. Pain coping research has developed through two different approaches (Manne & Zautra, 1990). One approach has been to assess pain coping that requires chronic disease patients to specify the primary stressor in their life and how they deal with it. Patients often, though not always, specify pain. General coping questionnaires (e.g. WOC, COPE) are used in such cases allowing for variation in patients' reporting of disease-related stressors. Another approach has been to assess specifically how patients cope with pain using pain specific coping questionnaires (e.g. Coping Strategies Questionnaire (CSQ), Vanderbilt Pain Management Inventory (VMPI)). The approach adopted depends on the purpose of the study. Pain coping questionnaires allow the researcher to identify important coping behaviours that may prove useful for inclusion in pain management interventions. The use of general coping questionnaires permits a comparison of coping responses across the full domain of multiple, pain-related stressors such as loss of occupation/income, relationship problems and social isolation. It is the latter approach, which is adopted in this study.

A growing number of researchers have used Lazarus & Folkman's (1984) stress and coping model to investigate the role of coping in explaining differences in adjustment among chronic pain populations. According to Lazarus & Folkman (1984), coping entails "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person." Coping responses are thought of as a dynamic series of transactions between the individual and the social and physical environment.

Pain was selected as the stressor, given the prevalence of the problem reported in Phase I among respondents, irrespective of OA diagnosis. Further, although having a chronic condition such as OA presents the individual with numerous challenges, it is pain symptoms which are appraised as the most stressful and less controllable (Downe-wambolt, 1991; Giorgiono et al., 1994). Chronic pain is a suitable context for studying the relationship between , coping and psychological distress. Individuals with chronic pain are often thwarted in their attempts to cope with their pain, which may impact adversely on other life domains such as work and personal relatationships which may in turn cause emotional distress. (Affleck et al., 2000).

The study employed a cross-sectional, postal, survey design, which was appropriate to test for relationships between key variables. A detailed description of the questionnaire content, design and analysis is presented in Chapter 6.

3.9 CHAPTER SUMMARY

This Chapter has set out the rationale for adopting a combined methodological approach to studying the long-tem effects of playing professional football in the UK, which is an area where there is currently no published research. In Phase I, a large-scale, quantitative survey will examine the extent of injuries and OA among ex-professional footballers and establish any psychosocial impact. In Phase II, in-depth interviews with a small sample of respondents from Phase I will describe the lived experience of OA grounded in the reality of ex-professional footballers. Findings from Phase II will inform the selection and development of measures employed in the Phase III quantitative survey which will examine relationships between pain variables and psychosocial distress.

CHAPTER 4.0
THE LONG TERM HEALTH IMPACT OF PLAYING PROFESSIONAL FOOTBALL IN THE UK

4.1 OVERVIEW

This chapter describes a study documenting the risks and the long-term consequences involved in playing professional football in the UK. This study also explores the impact of medical treatments and development of OA on former players' health related quality of life (HRQL).

4.2 AIMS

(a) to document the short-term and long-term physical and psychosocial consequences of playing professional football in the UK.

(c) to examine the impact of OA on HRQL, and

(d) to examine differences in HRQL between respondents with and without OA.

4.3 METHODS AND PARTICIPANTS

The study employed a cross-sectional survey design. Data were gathered via a self-administered postal survey. The study sample (N=515) was recruited through five Former Players Associations (FPAs). Each of these organisations comprise former players who have at some time in their career played for the team to which the FPA is affiliated. The FPA activities include playing charity and veteran games and producing newsletters. To ensure anonymity, the survey and follow-up reminder were distributed by officials of the FPAs. Access to the names and addresses of former players was not made available. Overall, 284 of the 515 questionnaires distributed were returned, giving a response rate of 55%. Agreement to distribute the questionnaire was given by the FPAs on the understanding that their burden would be kept to a minimum. Consequently, assistance with ascertaining the characteristics of non-responders was not forthcoming.

Questionnaire

The questionnaire was developed from a synthesis of existing literature and my previous experience of research in psychosocial issues of OA. The questionnaire (see Appendix 1 for copy of Phase I questionnaire) was piloted-tested among a sample (N=6) of ex-players who were currently employed in a coaching, managerial or development role at a local, midlands football club. No alterations or improvements were suggested and all questions were answered indicating acceptable comprehensibility. The questionnaire sought information about the following:

- **Demographics and career details**

Age, age at retirement, number of games played, career length.

- **Injury and treatment experience while playing professional football.**

Self-reported frequency and types and severity of injuries received. Self-reported frequency of surgery undergone: Use of cortisone injections.

- **Treatment experience since retiring from professional football.**

Self-reported frequency and types of treatments received, treatments currently awaited and current use of medication.

- **OA diagnosis.**

Respondents were asked if they had been diagnosed with OA and at what age. Respondents also provided information about other morbidity and disability status.

Health-Related Quality Of Life (HRQL)

In recognition of the multidimensional impact of illness and disease, there has been a growing awareness of the importance of investigating and measuring HRQL. Yet, there is neither an agreed definition of HRQL nor agreement on how to measure it (Muldoon, Barger, Flory et al., 1998). Health status, functional status and HRQL are terms often used interchangeably to describe disease impact (Muldoon et al., 1998). Muldoon et al. (1998) stress the importance of assessing mental as well as physical functioning and also emphasize the importance of measuring subjective as well as objective appraisals of health. Variables such as pain, mobility, psychological well-being, daily activities, employment and health perception are common, although not exhaustive, HRQL dimensions (Rejeski & Schumaker, 1994).

In this study, HRQL was assessed using the EuroQol (EQ-5D) (EuroQol Group, 1990), body image, perceived ratings of current and future health, and work disability. The advantage of the EuroQol is in its brevity and ease of use. The EQ-5D is a widely used, short, generic measure of health status. Construct validity of the EQ-5D has been tested among an arthritis population (Hurst, Kind , Ruta et al.,1997). It consists of five domains: mobility, self-care, usual activities, pain/discomfort and anxiety/depression, with each dimension divided into three levels : 1), no problems; 2), some problems; and 3), extreme problems. The EQ-5D can be presented in two ways: (i), as a health index ($\text{EQ-5D}_{\text{utility}}$) by applying relative weights (Dolan , Gudex, Kind , et al., 1996), which are attached to the 5 domains to provide a utility score ranging from 0 (death) to 1 (perfect health), or (ii), as a profile ($\text{EQ-5D}_{\text{profile}}$), based on the unweighted responses indicating a person's level of problems in each of the five domains. Both weighted and descriptive analyses are presented here. Moderate and extreme problems were combined for analysis of the $\text{EQ-5D}_{\text{profile.}}$

Perceived current health status, anticipated future physical health status and body image were measured separately with standard 100 mm horizontal visual analogue scales (VAS) anchored by *'poor/perfect'* and *'worst possible/best possible'* health status and *'complete dissatisfaction/complete satisfaction'* respectively. Scores range between 0 and 100, with higher scores representing better current and anticipated future health status and a higher level of body image satisfaction. The VAS has established reliability and validity (Huskisson, 1983).

A section in the questionnaire was provided for the respondents to write any comments about their experiences of either playing professional football or their health status. Content analysis was used to analyse an open ended question concerning respondents' experience of work-related problems due to injuries sustained during their professional career. The quotes included in the Results section are typical of the views expressed.

4.4 ANALYSIS

The Statistical Package for the Social Sciences (SPSS Inc, Chicago, Illinois, USA) was used to perform all data analyses. Unrelated *t* tests and χ^2 tests (for EQ-5D$_{\text{profile.}}$) were used where appropriate to examine differences in HRQL between respondents with and without OA. The χ^2 test was also used to calculate differences in treatment reporting.

4.5 RESULTS

Respondents

The mean age of the respondents was 56.1 (SD 11.8) years with a mean age at retirement from professional football of 32.3 (SD 4.7) years. One hundred and forty-seven (52%) respondents had representative honours and of these, 76 (52%) had been senior internationals. The majority of players (63%) had, at some time in their professional career, played in the Premier Division (formerly Division 1). The majority of respondents were defenders (35%), with the remainder comprising forwards (33%), midfield players (22%) and goalkeepers (10%). The majority (63%) of respondents reported frequently heading the football, with the remainder reporting that they occasionally (20%) or rarely (17%) headed the football. Three quarters (76%) of respondents were predominantly right-footed players. The average professional career length was 13.5 (SD 5.3) years and nearly two-thirds (60%) had each played over 450 competitive games. Nearly half (130/48%) of the respondents retired because of injury.

Injury and treatment experience while playing professional football

Nearly all respondents (268/94%) had been injured during their playing career. The 268 respondents who had been injured reported a total of 2266 injuries, mainly to ankle and knee joints. The majority of injuries were mild (1183), followed by moderate (682) and severe (401). Table 4.1 provides a breakdown of severity of injury by joint site.

Table 4.1. Frequency of mild, moderate, and severe injuries by injury site

Injury site	Mild injuries	Moderate injuries	Severe injuries	Total
Right knee	170	115	86	371
Left knee	114	110	65	289
Right hip	9	4	3	16
Left hip	38	11	9	58
Right ankle	284	119	61	464
Left ankle	219	91	28	338
Right foot	75	41	13	129
Left foot	47	26	13	86
Back	81	29	21	131
Neck	41	20	8	69
Other*	105	116	94	315

Notes: *'Mild injury'* = player missing games for a period of at least 1 week but not exceeding 1 month; *'Moderate injury'* = player missing games for a period of at least 1 month but not exceeding 3 months; and *'Severe injury'* = player missing games for a period of at least 3 months.
*e.g. wrist, arm, head, jaw, achilles tendon, shoulder

Nearly two-thirds (170/60%) of respondents had had surgery on at least one occasion during their career, with knee surgery being the most frequent operation (Table 4.2).

Table 4.2. Respondents reporting surgery frequency by surgery site (several respondents reported having surgery on more than one occasion).

Surgery site	Number of respondents	Total number of surgical operations
Right knee	79	139
Left Knee	72	119
Right hip	1	1
Left hip	4	4
Right ankle	23	30
Left ankle	12	19
Right foot	1	3
Left foot	6	11
Back	12	17
Neck	2	3
Other*	78	134

* e.g. shoulder, arm

The majority of respondents (166/59%) reported using cortisone injections during their career, with many of these (94/166) feeling that they commenced playing before they were fully recovered from injury. Of the 103 respondents who indicated the person responsible for making the decision to return prematurely, over two-thirds (69/103) said that they made the decision either unilaterally or jointly with another employee of the club (e.g. player themselves, manager, coach, physiotherapist, club doctor).

Treatment experience since retiring from professional football:

Surgical treatment

Since retiring from professional football, 92 (32%) respondents reported having surgery on at least one occasion. Of the 75 respondents who reported specific types of surgery, 48 had had knee surgery, of which 10 were joint replacements. Fifteen respondents reported having had hip surgery, of which 12 were joint replacements. Six respondents reported having two joints replaced. Twenty-four (9%) respondents were currently awaiting surgery, 13 for joint replacement operations (7 hip and 6 knee).

Non-surgical treatment and medication

One hundred and twenty-three (43%) respondents reported having had at least one non-surgical treatment (e.g. physiotherapy, acupuncture, massage, ultrasound) for injuries sustained during their career. Of the 107 respondents who provided information, 46 sought treatment for knee problems. Eighty respondents (28%) were currently taking medication to alleviate symptoms (e.g. pain, inflammation) associated with football injuries.

OA diagnosis

One hundred and thirty-eight (49%) respondents reported receiving a diagnosis of OA in at least one anatomical site, with the mean age at diagnosis being 40.4 (SD 12.5) years. Table 4.3 shows that knees were the most commonly affected site. Eighty-three respondents had OA in 2 or more joints, including 47 who had bilateral knee OA, and 42 who had OA in 3 or more joints.

Table 4.3. Distribution of OA by anatomical site (many respondents reported OA in more than 1 site)

Anatomical site	Respondents with OA (n=138)
Right knee	82
Left Knee	62
Right hip	18
Left hip	24
Right ankle	33
Left ankle	20
Right foot	6
Left foot	6
Back	26
Neck	22
Other*	15

*e.g. elbow, wrist, hand, shoulder, pelvis

Other morbidity

Eighty respondents reported medical complaints other than OA, the most common being cardiovascular conditions. Ten respondents reported neuropsychological problems (e.g. memory complaints, dizziness, headaches). Of the 43 (15%) respondents who were registered disabled, 33 had OA.

Comparison of HRQL between respondents with and without OA

There were no significant differences between respondents with and without OA regarding possible confounding influences of age or other morbidity. Table 4.4 shows that respondents with OA scored statistically significantly lower on EQ-5D$_{utility}$, body image and perceived health rating scales compared with respondents without OA, indicating poorer subjective health status among the former group.

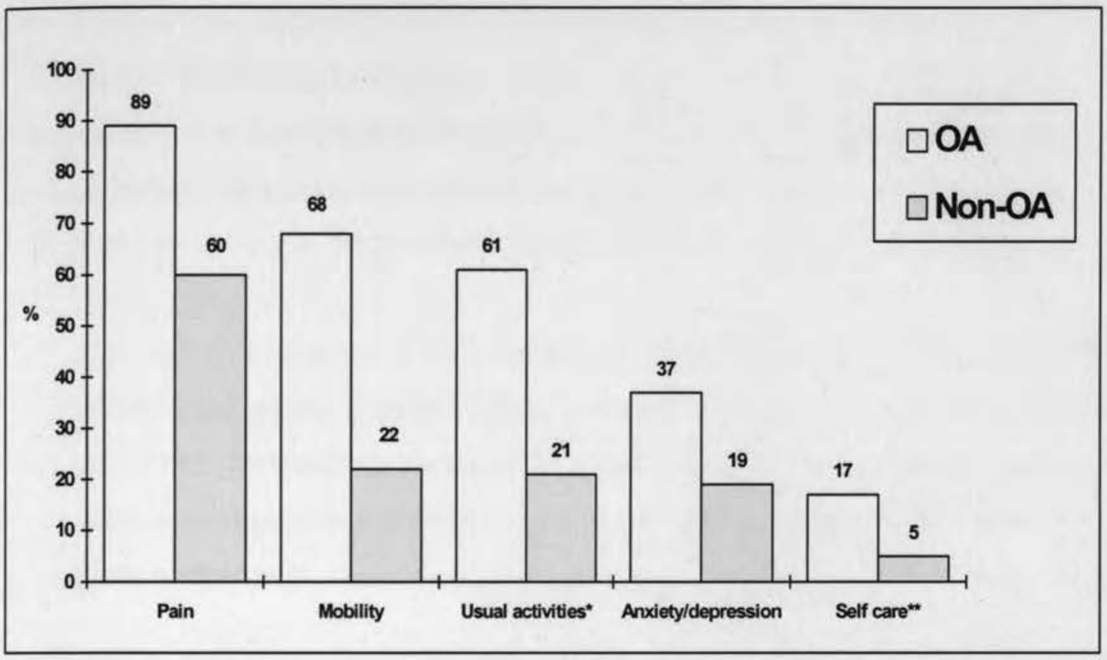
Table 4.4. Comparison of HRQL of respondents with and without OA

	OA Respondents (N=138)	**Non-OA Respondents (N=146)**			
Variables	**Mean (SD)**	**Mean (SD)**	**t**	**df**	**P* value**
EQ-5D$_{utility}$ (Scale 0-1, ↑ = better)	.58 (.31)	.81 (.19)	-7.45	266	<0.001
Current Health (Scale 0-100, ↑ = better)	56.4 (25.6)	70.4 (20.0)	-4.98	267	<0.001
Future Health (Scale 0-100, ↑ = better)	60.2 (23.3)	75.2 (19.3)	-5.69	279	<0.001
Body Image (Scale 0-100, ↑ = better)	51.7 (26.2)	66.3 (22.1)	-4.94	270	<0.001

*p value for t-tests.

Figure 2 shows that a significantly higher proportion of respondents with OA reported problems on each of the five EQ-5D$_{profile}$ dimensions: pain, mobility, usual activities, self-care, (χ^2 =31.04, 59.27, 46.18, 10.93, respectively, all df =1, p<0.001) and anxiety/depression (χ^2 = 10.48, df = 1, p=0.001).

Figure 2. Distribution of moderate or severe problems on EQ-5D$_{profile}$ dimensions, by OA status (%).



**Usual activities (work, study, housework, family or leisure pursuits). **Self care (washing/dressing)*

Compared with non-OA respondents, significantly more OA respondents were using medication and either had or were waiting for medical treatment including replacement surgery (Table 4.5).

Table 4.5. Distribution of treatments since retiring from professional football, by OA status (frequency (%)

Treatment	OA Respondents (N=138)	Non-OA respondents (N=146)	χ^2	df	(P value)
Surgical treatment	62 (45)	30 (21)	19.76	1	<0.001
Awaiting surgical treatment	19 (14)	5 (3)	9.73	1	<0.002
Non-surgical treatment	82 (59)	41 (28)	28.28	1	<0.001
Medication	68 (49)	12 (8)	61. 20	1	<0.001

Work disability

Forty-five (16%) respondents, the majority of whom (n=38) had developed OA, felt that their injuries had impacted on employment opportunities subsequent to retiring from professional football. Irrespective of OA diagnosis, some respondents felt that they were forced to give up a career in football coaching/management because of pain and impairment problems. The comments below from seven respondents exemplify these problems.

> "On retiring I became an F.A. coach working all over the world, but as the arthritis got worse, I had to turn coaching positions down due to the fact I could not demonstrate or run. It has cost me my career and salaries."
> (OA-related pain in right ankle, diagnosed aged 30. Also has pain in hip, back and knee)

> "Because I was unable to do any physical exercise for over 12 months, job opportunities in coaching/management were restricted."
> (Non-OA related pain in right knee and right hip)

> "After retiring through my hip injury it deteriorated badly over the next five years and ,after moving into coaching players, severely affected my ability to perform any physically demanding basics. However, since my hip replacement my mobility and quality of life have improved dramatically."
> (OA in right hip, diagnosed aged 27)

> "As a coach the ability to be on your feet both in the morning and afternoon was restricted by my old ankle injury. Severe inflammation led to a chronic arthritic condition of my ankle."
> (OA-related pain and inflammation in right ankle, diagnosed aged 32)

Work loss and its impact was evident across a range of other manual and non-manual occupations.

"My joinery work was affected because of inability to bend knees or climb ladders. I retired at 62 years of age."
(Non-OA related pain in knee, ankle, back and feet)

"I encountered problems workwise due to having a job entailing being stood by a machine in a factory resulting in my having to cease employment prematurely some years ago."
(OA-related pain and stiffness in both knees, diagnosed aged 35).

"From the moment of my ankle injury my football career was over. even though I played on for one season as a full pro and several seasons semi-pro. With being forced to quit football early, the amount of money lost say from the age of 23-33 would be quite phenomenal. I had to look for ordinary work, the chance of football coaching passed as I was no longer in touch with that circle of people. I eventually went to college (which I funded) and acquired an engineering qualification and I am now a draughtsman. Over the last 2.5 years I have had no rises due to my incapacity and have had to have extended periods of absence, 3-4 months, constant outpatient visits to hospital. All in all my general standard of living has been affected for many years. My family have also been greatly affected by all this."
(OA in hip, ankle and back, diagnosed aged 23. Pain and stiffness in joints affected with OA)

4.6 DISCUSSION

This exploratory study provides a unique and important insight into the self-reported health status of a sample of former elite footballers in the UK. Results confirm that professional football is a high risk occupation. Nearly all the respondents had been injured during their career and nearly half had to retire because of the injuries they sustained. The most common injuries were to the knee and ankle. Results suggest that the long-term impact of playing professional football is considerable, with many respondents requiring medical treatment for injuries after their professional career had ended. Raty et al.

(1997) found that elite footballers had an increased risk of knee injuries compared to athletes from other sports and that past knee injuries were associated with episodes of monthly knee pain. Results from this study indicate that the knee joint, more so than any other joint, continued to warrant treatment in later life. The use (or misuse) of cortisone injections was highly prevalent and they were often administered to hasten a player's return to playing before full fit. Cortisone was first discovered in 1948 and was found to be capable of reversing the inflammation of rheumatoid arthritis (Glyyn, 1998). Cortisone increases the body's ability to relieve severe joint swelling, pain and heat. The culture within professional football in the UK, which encourages players to train and play when not fully fit is well established (Roderick, Waddington, & Parker, 2000; Waddington et al., 2001). Players are often under pressure to play as a result of pressure from their club management and/or medical personnel (Draw & Fuller, 2001). Interestingly, results from this study confirm previous personal testimonies (Nevin & Sik, 1997) showing that often it is the players themselves who are culpable for making the decision to return before fully fit. It is not clear from these results the reasons why players exposed themselves to the risk of further serious injury.

The prevalence of OA was high, at 49% and had developed at a relatively early age. The average age of onset was 40. In the general population, less than 10% of men aged 35 to 44 develop the disease. OA is a chronic condition with variable patterns of progression and severity and it is a major cause of morbidity and disability. Moreover, the disease imposes a considerable burden on the health-care system and is a common reason for primary care consultations (Badley & Tennant, 1993). Accordingly, compared with non-OA respondents, significantly more OA respondents were using medication and either had or were waiting for medical treatment including replacement surgery (Table 4.5). Joint replacement is usually performed on patients suffering from severe arthritis where the pain interferes with activities of daily living . Replacement surgery can provide pain relief and allow patients to continue appropriate non-impact athletic activities such as swimming, cycling and golf (Dorr, 1991). Over 80 percent of replacements are successful for up to ten years, but thereafter some require re-operation. The outcomes of second operations are generally poorer.

Pain is the primary symptom of OA and increases when the affected joint is used (Creamer, 1997). Descriptive analysis of the five $\text{EQ-5D}_{\text{profile}}$ dimensions showed that nearly all respondents with OA reported problems with pain or discomfort. It was interesting to note that the proportion of non-OA respondents reporting pain was also very high at 60%. It is not clear why so many in this group were in pain, although it is likely to be related to injuries sustained while playing. A closer examination of the breakdown of responses showed that fewer (3%) reported severe pain compared to OA respondents (19%). A high proportion of OA respondents also reported problems with mobility and performing usual activities and over three-quarters of those who reported disability status had OA. Longitudinal studies have demonstrated that arthritis-related pain is a risk factor for future physical disability (Hughes et al., 1994). Although less of a concern, significantly more OA respondents reported problems with anxiety/depression and self-care activities than non-OA respondents, as was the case for each of the five EQ-5D dimensions.

Studies have shown that people with other forms of arthritis are concerned with alterations that they experience to their physical appearance (Bauman, Barnes, Schrieber, Dunsmore, & Brooks, 1989; Williams & Barlow, 1998). A study of rheumatoid arthritis patients found that high levels of body image dissatisfaction were associated with visible deformities such as abnormal gait (Carr & Thompson, 1995). Furthermore, body dissatisfaction was related to lower levels of emotional quality of life. Little attention has been paid to exploring body satisfaction among people with OA. One ex-player who has bi-lateral knee OA alluded to body image problems recently in a newspaper article (McKay, 1999). While attending a social function with other ex-players, he said you could actually hear the 'creaking' of the joints and he also observed the gait problems that ex-players have.

> "Footballers have a unique way of standing with their legs apart, because of their arthritis. They may look very healthy but their joints will be causing them agony" (Mckay, 1999)

Research has established that people with OA experience considerable work disability and loss of earnings (Pincus, Mitchell, & Burkhauser, 1989). This is a cause for concern given the relatively early age at which OA diagnosis occurred in this study. Physically demanding jobs that involve an element of repetitive joint loading can exacerbate OA symptoms (Felson, 1994). Work-related problems reported by respondents included early retirement, enforced reduction in the hours worked, and a change to a more sedentary occupation.

Limitations

A response rate of over 50% is considered adequate in postal surveys (Oppenheim, 1972). However, one limitation of the study is the possibility of a self-selection bias, as former players with musculoskeletal problems and/or a post-career treatment record might have been more likely to respond due to the salience of the topic. This has implications for knowing the true proportion of the sample who had received a diagnosis of OA and the proportion who reported OA-related problems (e.g. treatments, disability, work disability).

Confirmed medical diagnosis of OA, which is obtained by either a clinical examination and/or X-ray imaging, was beyond the scope of this study and conflicts with promised anonymity. However, there is some evidence supporting the validity of self-report diagnosis. A large scale study (Tennant, Fear, Pickering et al., 1995), which relied on self-report OA, found similar levels of disability to a study using radiographically confirmed OA (McAlindon , Cooper , Kirwan , et al., 1993). Further, two studies (Barlow, Turner & Wright, 1998; Rasooly, Papageorgiou, & Badley, 1995), which compared clinical and self-report diagnosis found high levels of agreement (87% and 86% respectively). Also, it is worth noting that prevalence of reported knee OA was 34% in this study, similar to that reported recently by Kujala et al. (1995) (29%) based on radiographic examination.

It is not clear whether the findings extend to former players who are not members of FPAs. Many of the respondents in this study had played at the highest level. It has been suggested that injury rates might be higher for players at lower skill levels (Kannus, 1999) with implications for problems reported in later life. Finally, given the method of data collection and its retrospective nature, the accuracy of the information provided could not be ascertained. A recent study, which compared retrospective and prospective reporting of injuries among the same group of athletes, found that a higher number of injuries were recorded prospectively (Kolt & Kirby, 1999). There were no differences between type or site of injury between data collection methods. The authors conclude that minor injuries are more easily forgotten, suggesting that retrospective data collection underestimates incidence rates. In the context of this study, it seems appropriate to suggest that treatment and injury data may similarly be underestimated.

4.7 CHAPTER SUMMARY

This is the first large-scale study to describe the long-term, health-related consequences of playing professional football in the UK. The results confirmed professional football as a high risk occupation with players complicit in exposing themselves to injury and disability. OA was identified as a major health issue for many ex-professional footballers in the UK. Pain was a problem for the majority of respondents, irrespective of OA diagnosis. The survey established that OA had a considerable impact on some ex-players' HRQL. However, the distribution of psychological morbidity was not uniform and suggests that individuals differ in their ability to cope with the demands of living with OA. Dieppe (1999) suggests that there is a need for a highly individual approach to investigating the expectations and experience of people with OA , rather than simple global scoring systems applied to everyone. According to Keysor et al. (1998), although there are published accounts of the experience of living with RA (e.g., Weiner 1975; Shaul, 1995) from the individual's perspective, little is known about the experience of living with OA especially from a male perspective. This shortcoming will be addressed in Phase II of the study.

CHAPTER 5.0 THE IMPACT OF INJURIES, OA AND PAIN ON THE LIVES OF EX-PROFESSIONAL FOOTBALLERS.

5.1 OVERVIEW

This chapter describes a qualitative study investigating the impact of injuries, OA and pain on the lives of ex-professional footballers. This study was funded by the British Medical Association: Joan Dawkins Fellowship.

5.2 AIM

Results from Phase I established the extent and nature of the psychosocial consequences of OA among ex-professional footballers in the UK. However, because of the quantitative design employed it was unable to uncover meanings and explanations of the phenomenon (e.g. OA & pain) under investigation. An in-depth exploration of potential psychosocial problems associated with retirement, ageing and disability among footballers and other professional athletes has been a neglected topic (Gearing, 1999). The primary focus of the interviews in this study was to describe, for the first time, the experience of living with OA and pain from the perspective of ex-professional footballers in the UK. As studies in this area are rare, the flexibility that qualitative interviews allow is appropriate for research which is exploratory in nature.

5.3 METHOD AND PARTICIPANTS

Study design and participants

Fifty-seven participants from the 138 who had been diagnosed with OA and who responded to the large scale survey in Phase I were provided with a written summary of the main findings and invited to take part in telephone interviews. Due to a misunderstanding, whereby some of the Former Players'

Associations who were responsible for recruitment to the survey could not identify who responded, it was not possible to select from the total OA group.

Participants were informed of the general theme of the interview and also told that the study was being sponsored by the British Medical Association (BMA). The participants were also notified of the interviewer's personal as well as a professional interest in living with OA having developed it as a result of playing amateur football. Participants who were interested in taking part in the study and who were prepared to provide written medical evidence of their OA status were asked to write their name, address and telephone number on a pre-paid postcard and return it to Coventry University. Thirty-four participants returned postcards. A sample was purposively selected which encompassed a broad age range (i.e. middle to old age), and disease duration (i.e. short and long duration). Twelve participants were interviewed before data saturation was evident as no new themes were emerging.

The median age of the participants was 64.5 years (range 45-76 years) and the median disease duration was 13 years (range 1-46 years). Table 5.1 provides a demographic and treatment history summary of the twelve participants. The median age at retirement from professional football was 33.5 years (range 23-38 years). Eight participants retired prematurely because of injuries with the remaining four participants retiring due to a combination of age and injury. The youngest participant to retire (age 23 years) did so because of damage to his eyesight caused by heading a football. The median age at diagnosis of OA was 36.5 years (range 29-60 years). Two participants, aged 29 years and 35 years respectively, retired from professional football as a result of having OA confirmed. Injured joints causing premature retirement for four participants subsequently developed into OA.

Table 5.1. Demographics and surgical histories of participants

Participant 1	58 years old, single. OA left knee diagnosed aged 50, 2 knee operations (full meniscectomy & osteotomy) cortisone injections. Currently using analgesics & awaiting knee replacement surgery. Retired aged 55 because of OA. Registered disabled.
Participant 2	65 years old, widower. OA right ankle diagnosed aged 50, also constant severe pain in right knee. Currently using analgesics. Retired.
Participant 3	66 years old, married, OA left knee diagnosed aged 55. 3 knee operations (including full meniscectomy), cortisone injections. Currently using analgesics. Retired aged 60 to care for wife.
Participant 4	61 years old, married. OA left knee diagnosed aged 60. Pain in right knee, back & knee. Currently using analgesics & awaiting knee replacement surgery. Retired aged 60 because of OA.
Participant 5	64 years old, married. OA right ankle diagnosed aged 29. 24 cortisone injections, awaiting ankle operation. Currently using analgesics. Retired aged 55 because of OA.
Participant 6	66 years old, widower. OA both knees diagnosed aged 65. Spinal fusion aged 35. 1 cortisone injection. Currently using analgesics. Retired.
Participant 7	68 years old, married. OA both knees diagnosed aged 43. Full meniscectomy on one knee, partial meniscectomy on other knee. Bi-lateral knee replacement surgery. Currently using analgesics. Retired.
Participant 8	76 years old, married. OA both knees diagnosed aged 30. Full meniscectomies on both knees. Has been advised to have bi-lateral knee replacements. Currently using analgesics. Retired aged 59 because of OA. Registered disabled.
Participant 9	45 years old, married. OA right knee diagnosed aged 44. Cortisone injections. Full meniscectomies on both knees. Currently using analgesics.
Participant 10	64 years old, married. OA both hips diagnosed aged 60. Cortisone injections. Bi-lateral hip replacement. Currently using analgesics. Retired early because of OA. Full-time carer for wife.
Participant 11	66 years old, married. OA right knee & right hip diagnosed aged 43. Cortisone injections. Meniscectomy to right knee and right hip replacement. Currently taking analgesics. Retired.
Participant 12	50 years old, divorced. OA both knees, diagnosed aged 35 years. Osteotomy to right leg and left knee replacement surgery.

Data collection

The twelve interviews lasted between 35 minutes and 70 minutes. This number of interviews is broadly consistent with the prevailing trend among qualitative interview studies (i.e., 15 ± 10) (Kavale, 1996). Semi-structured or unstructured interviews are the mainstay of qualitative chronic illness research in general (e.g. Anderson & Bury, 1988) and have been used in qualitative arthritis research (e.g. Bury, 1988; Locker, 1983; Weiner, 1975).

The interview schedule and process were piloted in the first interview. These data were merged with those from the subsequent eleven interviews as the analysis revealed consistent and transferable themes across all interviews. The interview schedule focused on the participants' experience of living with and managing OA, which have been shown to be areas of substantive importance to other chronic disease populations as reported by researchers employing qualitative methods (e.g., Schur et al., 1999; Smith, 1996). Relevant established interview schedules helped to generate specific questions (see Mathieson & Stam, 1995; Smith, 1995). The interview format was sufficiently flexible to allow participants to raise and discuss other issues, which had personal relevance. Further, questions were not asked in a mechanical sequential manner, as often the participants spontaneously introduced areas of concern without prompting.

Data analysis

The interview data were analysed using interpretative phenomenological analysis (IPA) (Smith,1996). In qualitative research, rigorous methods are employed to ensure that the findings are 'trustworthy'. In this study, trustworthiness of the findings was enhanced in the following ways. The analytical procedure began with the interviews being transcribed in full. The transcripts were then read several times to obtain a thorough familiarisation with the data. During this stage each transcript was coded using a process of open coding to prevent interpretations based on associations in the literature (Strauss & Corbin, 1990). Thus, the analysis is mainly organised around themes which emerge from the transcripts rather than pre-determined constructs. Next, emergent themes were identified, organised and then subjected to a detailed analysis to establish interrelationships. The shared themes are presented to account for the meaning of the informants' experience grounded in their own words. The first three transcripts were independently examined following the above procedures by the author and an experienced researcher with an interest in the area.

5.4 RESULTS

Searching for a cause of OA

All participants showed a strong motivation to locate the cause of their OA in relation to some aspect of their playing career such as trauma, injury, surgery, inadequate treatment, number of games played and playing when in pain and/or injured. Often there was no single definitive reason, rather it was an interplay of factors. Participants often played with injuries as a result of pressure from managers and/or physiotherapists. One participant described how he was encouraged to continue playing, even though he instinctively knew there was something seriously wrong with his foot, which later transpired to be a broken bone:

> "I'd done it a week before against Liverpool in the FA Cup and they gave me all this crap treatment ... and I thought damn, I know more than them and I knew it [the pain] wasn't going away." (P1) [1]

The extracts below clearly show that participants felt reluctant to challenge decisions that were made at the expense of their current and future physical well-being. The reasons why they were unwilling to do so are complex and can be partly located within the highly masculinised institution that is a modern professional football club. Sabo & Panepinto (1990) have described how the masculine, athletic identity of American male college athletes is shaped by deference to the coach's authority who assure players that pain is an acceptable, even desirable, element of sport which separated winners from losers. Gearing (1999) has similarly described English football clubs as being keen to promote a "disciplined and collective approach". One participant from the study told of how he and his team mates were 'fearful' of the club manager who treated them like children.

> "There were no substitutions in those days and if you were injured then you had to stay on the pitch. You were in terrible pain but there was nothing you could do about it. No you can't come off. That was the rules." (P2)

> "And I was injured and they [the manager and coach] sent me out to do a little spell of warm ups, you know, and he said right, 'I want you to cross the ball'. So I said,' what do you mean', he said, 'just push a few balls over, you know'. I was in terrible pain I shouldn't have been kicking the ball really... You just had – you just did whatever they told you to do, you know. You thought they knew what they were doing, sort of thing. So you know, you just accepted it." (P6)

> "The problem was, I think in them days as well, was, that the physio was the guy that had played at the football club for 40 years and they put a brown coat on him .... I mean I can remember a guy that was at Stockport County and I had a swelling on my knee a very big bad swelling. But instead of putting ice on it he put heat on it. Do you know what I mean? He wasn't qualified and all he did was make it worse. You know a haematoma on your thigh, you know 'dead leg' they call it, and I have seen them massage it, which is the worse thing you can ever do. You know the same guy come in and massaged the haematoma. Instead of missing a week you were out 3 months because he'd stretched it all the way down your thigh." (P5)

> "I mean' they just put you on a bench and gave you a rub – a massage with soapy water or olive oil and if you were – if you felt as though you could run, you went out and there were times that you would play when you weren't fit." (P11)

> "I was kicked so many times in the same place. I got injured on a Saturday and had intensive treatment through Saturday night, Sunday and Monday to play on Monday. You know it was a game on Saturday and Monday - and that was a silly thing to do really and I played with a heavily strapped up ankle, because that's what they wanted you to do, so you did it." (P2)

Participants were immersed in a 'culture of risk' (Nixon 1993) in which they internalised the belief that pain and potential long-term disability was a normal part of football. Participants spoke of team-mates who were always playing injured and being coached and managed by former players, many of whom were visibly disabled, who nevertheless extolled the importance of playing injured.

> "You used to see ex-players hobbling about, they could hardly walk. You knew you would be very fortunate if you didn't get some form of long-term injuries through football." (P5)

> "The difficult question would be, which ex-players you met who hadn't got it [OA]." (P3)

> "The old coaches and backroom boys were hobbling about, but nobody gave it a thought." (P12)

> "You know you saw someone hobbling, you just have a laugh about it, and just accept it. We didn't know about it [OA] when we entered the profession and nobody warned us about it because no body bothered about it." (P11)

Given this exposure to the likelihood of future health problems among previous cohorts of footballers, it came as no surprise to the participants when it was they who eventually received a diagnosis of OA. Neither did any of the participants feel stigmatised by the diagnosis, even in cases where there was a visible physical deformity. One participant perceived their OA as something which confirmed that they had "'worked hard" during their career and was a symbol of a long, and by implication, successful career.

> "Well we do [accept OA] it's just par for the course really this arthritis. It's like tennis elbow, you get that in tennis... I've played up to being 35 year old. I was in the game nearly 20 years. When you've played over 600 games it takes its toll." (P4)

The culture of risk extended to the medical treatment the participants received. Many reported the use, or rather the misuse, of cortisone injections which were administered to ensure that players were fit to play. Some participants were unaware of the health risks (e.g. tendon and ligament rupture, broken bones, cartilage degeneration, (Orchard, 2001) associated with repeated injections to the same joint. It is not unknown, particularly at clubs with small squads and where the pressure for players to play injured is therefore greatest, for some doctors to withhold deliberately from players medical information about treatment side-effects and injury prognosis (Roderick et al., 2000). Other participants were aware of the risks but decided that they were outweighed by the benefits of being able to continue to play free of pain.

> "Well the thing is, I was amazed when I saw this needle... and all of a sudden when you released it ... it had gone [the pain] I couldn't believe it like, I mean I can understand with some players that have been on them for a long time because they were in severe pain. I was fortunate really that I had only one you know, but I know a lot of lads were on them all the time." (P1)

One participant now regretted having repeated injections to his ankle which subsequently developed OA.

> "The cortisones I think might have made it worse. I thought maybe now if I had to choose, I wouldn't have the cortisones." (P5)

In retirement, participants continued to require medication and continued to calculate the benefits and risks associated with this method of managing painful OA symptoms.

> "The doctor gave me about a 100 tablets, but I only took one. I don't think they're doing what's good for you. I mean it only kills the pain. It only helps it but it doesn't heal it. It's like toothache. You have toothache, take a tablet but it comes back." (P3)

> "I take Arthrotech 50 but they don't do any good at all really. It's just taking it for taking its sake. As I say, they're not helping much, so whether I call it a day I don't know." (P4)

> "They [analgesics] only help, they don't exactly make it 100% but I have to take them as I am in terrible pain." (P5)

> "Well, I didn't really want to and for sometime I knocked it off for about 2 or 3 months, and then I found that I was getting these bloody aches and pains back again and so I've gone back on them." (P11)

Self-imposed pressure to play injured was often mentioned by participants. Being injured introduced fear and anxiety about not being able to regain a position in the team, which had immediate financial implications due to forfeiting performance and appearance-related bonuses. Loss of starting position due to injury also brought into focus the real possibility of being transferred to or being unable to secure employment with another club. During the era when the participants played the financial rewards were not as great as they are today, not even for the more successful ones, and players were ill-equipped in terms of education and training for an alternative occupation outside of football. Therefore it was of paramount importance that a player's career was not prematurely curtailed because of injury-related problems.

Two participants were concerned that current players should be made aware of the potential long-term health risks involved in playing professional football. Whereas one participant considers the onus to be on players themselves to reduce the risks of long-term problems, the other participant thinks the onus resides with those responsible for the players' welfare. There are many stakeholders with an interest in ensuring a player does not unnecessarily miss a game through injury. These include the manager, club chairman, shareholders, spectators and sponsors. The increasing commercialisation of football has been posited as a factor which may result in increasing pressures on medical staff to treat or rehabilitate players in a manner which they find unacceptable, or allow a player to return from injury too soon (Macauley, 1998). Sponsors, too, expect 'star' players to perform when it might not be in the player's or club's best interests.

> "You never thought about arthritis or the effect that it could have on you in years to come ... It may be something that young footballers of today should be warned about what could lie ahead for them." (P11)

> "I think that the warning from this study is actually to those in control of players, to have respect for their future. That's where I think the warning goes and that medical teams, coaching people, the managers, the boards of directors give respect to the players and their future well being." (P12)

Impact of OA

Pain was a constant feature of everyday life for all of the participants, yet it was restricted mobility and movement that gave meaning to their life with OA. This is understandable given the centrality of fitness, strength and agility to their former career as a professional footballer. Running through their accounts is a profound sense of loss at not being able to perform routine physical activities, encompassing a broad range of life domains including work, social and leisure activities.

> "We take a lot of children to play five-a-side-football. I thought 'I'll have a little run out'. And one of these lads were running and he caught me at side and I went down and my leg were killing me. And I said, 'never, no more'." (P3)

> "Well it's very serious. I've got to use a stick to get about. I can't bend down. It's very, very painful actually, all day everyday." (P4)

> "I have a friend comes in and he does the gardening and things like that. I can potter a bit but not do anything that's strenuous you know. So it's really affected life really." (P5)

> "That's the main thing, your lack of mobility. I mean we're both keen dancers and that's gone by the board now, we can't even do a slow waltz round the flipping 10 by 10 floor space." (P8)

The following account, while vividly capturing the pervasiveness of OA, also highlights the problems people face when disability and impairment are not accompanied by a visible deformity. The only way they can convey the seriousness of their condition is to tell people, and this introduces the risk of being perceived negatively as someone who complains.

> "Arthritis becomes the centre of your universe to a degree and you have to live according to it. But it becomes very difficult for other people to live according to it. They can't see it, they can't feel it, it's completely intangible. And you can make all the plans in the world but, if you wake

> up one morning and you find that one of your legs just doesn't want to do it everything has to be changed." (P12)

Professional sportsmen are a unique occupational group who experience their first enforced retirement in their twenties or thirties and yet can suffer another premature retirement because of OA. This was particularly difficult to accept for several participants whose jobs were physically demanding. In the first account it can be seen that the participant experiences a deep sense of rejection and shame because of the negative evaluations of his physical appearance from younger, fitter players. One of the participant's doctors acknowledges the problems faced by his patient caused by a lack of formal educational training which prevents him pursuing an alternative career that does not entail weight-bearing activities.

> "I have got an FA coaching badge, which has got me work over in Norway, Iceland and South Africa, and I coached a few clubs here. But nobody wants you with a bad limp. You know it is embarrassing. Like if you are a coach you've got to demonstrate. You don't want to be stood there with a walking stick. So in 1992, I had to really call it a day. You go to a club and like you know you are very much up against it when they say hey 'limp along'. They want a guy that's like healthy and fit, moving about type of thing you know." (P5)

> "I was an engineer and I stood at the machine all day you know. It wasn't doing my legs any favours. I mean with the weight of the body on them. It would aggravate them and the doctors said, 'well, I know it's easy for me to say, but really, there's not a lot we can do. I know you can't get a job where you're sat down, but my only advice is, if it's possible, is to give yourself early retirement'."(P8)

> "I can't move, hardly. I can't get down. That's why I had to finish from my job [joiner] because I couldn't kneel down. What used to take me ten minutes would probably take an hour now, things like that." (P4)

One participant had to retire from his bakery job because his specialist was reluctant to refer him for knee replacement surgery because he was considered too young at 55.

> "It's a short life professional football you know and it's the same now. We get another job, and damn, this happens." (P1)

Several participants were extremely concerned that any significant deterioration in their condition could result in them becoming housebound in the future. Loss, or reduction, of activities was often associated with emotional distress as participants described feelings of frustration, bitterness, anger, irritability and sorrow as they nostalgically recalled the time when they were free from pain and disability. While participants complained about their plight, they often felt guilty at doing so and often simultaneously minimised their problems.

> "I am more bad tempered. I have always been sort of happy you know. Mix with everybody and joke with everybody. I don't do that now, you know what I mean. It's nothing really though. It's there isn't it, and really, I am lucky." (P1)

Two participants were also caring full-time for their wives who had long-term medical conditions. Paradoxically, this added burden was construed positively by both participants. The stoicism apparent in the following account is consistent with findings from other studies documenting people's attempts to come to term with chronic illness (Blaxter & Paterson, 1982; Pound, Gompertz, & Ebrahim, 1998; Williams,1990).

> "We just grin and bear it. We don't give in. We don't give in with anything. I mean my wife took ill 10 years ago. There's not a cure for it. She were in bed three years. We never gave up." (P3)

Another participant told of how his obligation to his wife prevented him from focusing on his own problems.

> "I think the best thing is that I'm looking after her and that takes me mind off worrying about myself, you know." (P10)

Managing the impact of OA

A dominant concern for all of the participants was to minimise the degree to which OA impacted on their everyday lives. Throughout the interviews participants referred to a period which was the happiest and most fulfilling period of their lives. Participants often referred nostalgically to their past as a professional footballer and these idealised accounts often served to enable them to accept their current health problems as "part and parcel" of playing and a "price worth paying" for having the opportunity to enjoy a fantastic and unmissable experience. Comments from several participants typified the acceptance of the risks involved. The imagery evoked in the second account of sacrificing limbs for a career in professional football is ironic given that some of the participants had to have joints replaced.

> "Knowing now there is no way I would have given up football then, what it was going to be like in a couple of years. I enjoyed it so much, it was a part of life." (P7)

> "It [OA] is part and parcel of the game. I really fully enjoyed the games I played and I wouldn't have missed that for the world, and as many people had said to me, 'well, I wish I had been able to do what you had done – I would have given my right arm for it". (P2)

Often participants felt able to cope with the impact of OA because of their previous experiences in overcoming traumatic adversities such as pain, injuries and lengthy rehabilitation during their football career. Some participants spoke of how being successful in football meant having a competitive spirit and a positive attitude which was also important in managing OA. Several participants recalled the high level of fitness they enjoyed both as a professional footballer and throughout the rest of their lives and were keen to emphasize that, despite having OA, they still identified with the role of an athlete. One participant, in describing how he continued to play golf, evoked images of a competitive athlete who refused to be beaten.

> "Well I go through the pain barrier. I love golf more than the pain. When you are playing golf you are concentrating on your golf and lets you forget about it." (P6)

Another participant's description of a strenuous rehabilitation programme for bi-lateral knee replacement surgery in which he described having to learn to walk again, similarly identified pain as something that must be confronted and overcome.

> "The physiotherapist could see how conscientious I was. Well I was in there for 10 days doing exercises and mastering the pain. You know you've gotta get through that barrier." (P7)

Another participant was keen to emphasize the importance of maintaining fitness and how even with his disability he was more athletic compared to others of a similar age.

> "I have always done stretching, and I do a lot of stretching and they are actually surprised as what I can do as far as my age is concerned." (P1)

Visiting the gym had a dual purpose for one participant. He hoped that exercising would prevent OA from "spreading" to other joints and the social contact he enjoyed with other male members provided an opportunity to talk about "man things". Several authors (Gearing, 1999; Nelson, 1995; Swann, Taylor, & Ward, 1994) have testified to the important role that camaraderie has within professional football. Players' professional and masculine identities are shaped by the humour and banter which are shared by current and former players alike (Gearing, 1999). Consistent with these other studies, several participants said that what they missed most about not playing professional football was the company of former team-mates. Several participants attended football matches, which offered the opportunity of socialising and also distracted them from thinking about their condition. Some participants spoke of the importance of retaining a good sense of humour as a method of counteracting negative feelings and maintaining a positive self-concept. One participant, whose wife had diabetes, laughed as he told of the nickname ("rack and ruin") given to them by one of their children. Another participant made light of his badly misshapen ankle by entertaining his granddaughter.

> "It's ugly. I have got an ugly ankle. I always say that to my granddaughter, but I say to her, 'if you don't behave, I'll put it on you. I'll hook you with it'." (P5)

Another participant joked that the frustration and depression at watching his former team who had largely been unsuccessful in the recent past were greater than that associated with his OA.

Whereas for some participants meeting other ex-players was an opportunity to exchange information about OA medication and treatment, another participant offered an explanation as to why he and his former team-mates were reluctant to discuss these issues.

> "I think the thing is, you know, people are frightened of you. No, well, not frightened but I think we are all trying to be brave, see what I mean. No-one wants to moan you see." (P6)

Another participant also reflected on how conversations about health problems were not an opportunity to complain and be negative, but were rather discussed in a dispassionate manner which emphasized that problems should be accepted and dealt with.

> "Oh, you'll just pass comments 'Oh I've got a bad knee, I've got a bad hip'. It's probably to do with football, but they're all like myself, most of them. We just get on with it." (P7)

Interestingly, these comments were made after participants had seen a television documentary featuring ex-players who were considering taking legal action against their former clubs for mistreatment of injuries, which in many cases led to OA and disability. It has already been noted that some participants were critical of the treatment they received but as yet no-one felt strongly enough to sue their former employers. Although football has been described as a 'disease of the knee,' participants did not view their OA as an industrial disease akin to other occupational-related conditions. The following quotes typified the attitude among the participants :

> "If I had my time all over again, would I change it? And in the very cold light of day, I would have to say, no I wouldn't. In spite of the pain I got to the very top in football, I had the most wonderful few years. If I had been warned as a 14 or 16 year old kid this is going to be your future after football. I would have still done it." (P12)

> "What can I say, they – it's a man thing, …you don't complain about what you've got … and there's always somebody got worse than you've got" (P10)

> "I don't regret anything that I have done. I am not looking back for anybody to take the blame or anything." (P9)

Clearly, participants strived to maintain a positive image of an ex-footballer who accepts his punishment with good grace and who is reluctant to 'break rank' and be critical of a profession he is still proud to be associated with.

As participants discussed their problems, some employed the self-protecting strategy of comparing themselves with other people worse off than themselves. They minimized the importance of having OA through a range of comparisons with people they knew with other illnesses, other ex-footballers with OA and former team-mates who had died. The following quotes exemplify the participants' use of downward comparisons in coming to terms with their OA.

> "You see others that hardly walk at all and you think, well there for the grace of God go I, sort of thing. You just make the best of a bad thing. I say, at least I've got two legs …even though they might not be as new as when I first got them." (P8)

> "Some guys go through horrendous injuries when they're playing and have to give up football entirely, you know at 25 and stuff like that. I was lucky, I had a long career." (P7)

> "I have had a great life for myself. I am a lot more luckier than some of them. Just look at Tommy Smith [an ex-player who is suing his former club because of injuries sustained while playing], I mean he's in a bad way now isn't he." (P9)

> "I enjoy meeting up with some of the old players and seeing who has died." (P5)

Comparing oneself to others who were coping well with their adversity (upward comparison) served as a motivation for some participants to appraise their OA as manageable.

> "Well I mean it's not very good actually but I think there's a lot of people worse than I am. So other people are having to carry on with it, so I carry on with it. I keep feeling it now and again but I just carry on. I don't worry about it." (P3)

> "I always think of Superman [Christopher Reeves]. He was a hell of an athlete wasn't he? And I look at him and I think 'Christ' - do you know I am moaning about my arthritis and look at him. Like I said, he's getting along and he's trying to enjoy life you know. Whenever I see him on TV I think 'Oh blimey' look what has happened to him, and I think, there is me like." (P5)

> "He's [Steve Redgrave, 5 times Olympic gold medallist who has diabetes] a prime example of what you can do. He's got through adversity hasn't he. He shows if he wants to do it he can do it." (P8)

Not all comparisons proved to be beneficial coping strategies. Being ex-professional footballers, comparisons with a former idealized self reinforced feelings of sadness and loss as their bodies, which formerly served as their main source of income, status and pleasure, were now something which had to be endured on a daily basis.

> "I mean I have been in the game 18 years, and the thing is, I have always been fit. And you know for this to hit me, you know in 1994, you know this arthritis and I thought, dear me, you know. I have always been fit and I always like trying me best to keep as fit as I can. People say to

> me 'damn, you're looking well'. But deep down I don't want this problem which I have got with my knee." (P1)

> "I thought well I know people who go to 5 aside football. The over 50s or the over 60s you know you have some friends that do that but I can't do that you know. Oh I feel very low like, you know, looking at things and think 'Christ I used to do that'." (P5)

5.5 DISCUSSION

One of the aims of this thesis was to enable ex-professional footballers to describe, from their own perspective, how they managed the impact of a common, chronic, disabling condition. All participants had experienced a professional career characterised by having to cope with and recover from serious injuries. The findings support those of Roderick et al. (2000) who similarly found that current professional footballers are encouraged to ignore pain ('play hurt') at the potential expense of incurring further injury. Long-term injuries are often associated with financial and/or emotional losses as players contemplate problems with rehabilitation and possible permanent exclusion from the game. Therefore, one can speculate that a career in professional football engenders an attitude which is conducive to successful adaptation to a later life of chronic pain and disability. In other words, by successfully learning to 'play hurt' and coping with acute episodes of pain, incapacity and treatment, ex-players possess the necessary coping skills to 'live hurt' in the context of a disabling condition. Interestingly, studies have shown that athletes have a higher level of pain tolerance than non-athletes (Pen & Fisher, 1994; Ryan & Kovacic, 1966; Scott & Gijsbers, 1981). Whether this finding extends to ex-athletes has not been reported, but one can speculate that this might be the case.

Some of those interviewed found it difficult to focus on the parameters of the study and discussions naturally turned to talking about their football career. Interestingly, when describing strategies to cope with their OA, participants often used a vernacular more appropriate to describing winning a football match than living with a chronic condition. The findings from this study are consistent with those of Gearing (1999) who concluded that ex-footballers appear to draw solace and comfort from reminiscing about their experiences as a professional footballer and these reflections represent a positive strategy for coming to terms with life outside of football and the ageing process in general.

Consistent with Weiner's (1975) study of arthritis patients, participants' accounts illustrated their efforts to lead a normal life. Weiner has described this phenomenon as "normalising", defined as "...proceeding with the activity imperative as if normal". The desire shown by people with arthritis to remain active was also noted by Locker (1983). The importance attributed to the maintenance of a semblance of 'normal' physical activity indicates a desire to maintain or to regain control by not letting the condition totally dominate all aspects of life. Keeping busy was an aspect of carrying on as normal. Several participants in this study felt that keeping busy not only helped them feel normal but had the added benefit of distracting them from focusing on their OA.

Participants actively sought to understand the reasons why they developed OA. They partly located the blame in various aspects of their playing career, including self-imposed pressure to play when in pain and injured. In a study which examined personal models of OA and their relationship to self-management activities, Hampson et al. (1994) found that patients who believed that they were in some way personally responsible for causing their OA were more likely to believe that they could alleviate the symptoms through their own actions. Phase I results showed that over half of all respondents had received a cortisone injection during their career. Some interviewees told of the regret they now had at receiving them because of the worsening problems they attribute to them.

Another consistent finding with Phase I, was that pain was identified as the major problem pervading all aspects of life. It was clear that the participants were socialised into accepting pain, injury and the significant risk of OA as an integral part of the life of a professional footballer. In a related study, Roderick et al. (2000) uncovered evidence of what is referred to in football as having a 'good attitude' (i.e. being able to tolerate playing with injury and pain), which was reinforced by punitive practices by key personnel at the club. Players were subjected to a regime which reinforced feelings of worthlessness. Some managers ostracised and ignored injured players, were openly critical of them in front of other players, and, as found in this study, requested that they train and compete before fully recovered. Roderick et al. (2000) also found that injured players were 'inconvenienced'. This included keeping injured players behind at the training ground to ensure their departure coincided with the start of the rush hour traffic. A further disincentive was having to report for treatment every day including Sunday.

Generally, participants adopted a stoical attitude towards their situation and considered that OA was something that just had to be endured and ultimately accepted as "a price worth paying". Jansz (2000) suggests that stoicism, defined as not showing vulnerability and restricting emotions (p.170), is one of the attributes which characterise the dominant cultural model of masculinity. The results from this study and those reported by Roderick et al. (2000) suggest that stoicism is also an integral aspect of the culture of professional football. Elsewhere, Blaxter & Paterson, (1982) interpret stoicism in the context of chronic illness as a response to the notion that illness is regarded as a weakness which is overcome through strength of character. Overall, the participants tended to minimize or, in some cases, deny the impact that OA had on their lives, which at first sight seems at odds with the accounts of a life of severe pain, surgery, functional impairment and emotional turmoil. This apparent contradiction was especially evident for the two participants who, in addition to their own health problems, were full-time carers of wives with long-term medical conditions. In general, participants bore their problems with a great deal of equanimity.

Even when participants vented negative emotions, they were quick to add a rider which dispelled any notion that they were complaining and unable to cope with the demands of their condition. Gray, Fitch, Phillips, Labrecque, & Fergus, (2000) concluded from their study of the experiences of men with prostrate cancer and their spouses, that while both men and women minimized the impact of the disease, men demonstrated a stronger tendency than the women to do so. Other studies have found similar differences in reporting on distress among samples of ill men and their partners (Baider, Koch, Esacson, & De-Nour, 1998; Keitel, Zevon, Rounds, Petrelli, & Karakousis, 1990; Morse & Fife, 1998). Gray et al. (2000) conclude from their findings that traditional masculine role expectations prevented participants from acknowledging vulnerability and emotional distress as it conflicted with their identities as men. Given that the participants in this study were ex-footballers who used to perform in an "excitement arena" (Swann et al., 1994) which is "laddish and highly masculine" (Williams 1995) involving regular acts of aggression, bravery and risk-taking, it is understandable that some participants were reluctant to dwell exclusively on the negative aspects of their OA. Rather, in keeping with their identity as a former professional athlete, participants sought to present themselves as someone who confronts and overcomes pain and adversity. Cornwell (1984) suggests that when talking about health individuals use 'public and 'private' accounts depending upon the relationship with the interviewer and the context in which the research occurs. Hodgetts & Chamberlain (2000) view 'public accounts' of health and illness as socially acceptable explanations which allow people to present themselves as 'moral' individuals who have not succumbed to ill health. Private accounts are considered to capture the true meaning of illness. Given that the participants were aware that the interviewer had developed OA through playing sport and therefore shared similar experiences, it is anticipated that the likelihood of private accounts being captured were increased.

An unexpected finding was that participants evaluated their situation by using a wide variety of comparisons, and in particular downward social comparisons, with others and with their former selves. Downward social comparisons are conceptually similar to downward counterfactual thoughts, which describe real or imagined alternatives which are worse than reality (Roese, 1994). Counterfactual thinking is more likely to occur after a negative event or outcome and in a series of experiments involving students, Roese (1994) showed that downward counterfactual thoughts resulted in improvements in positive affect. Similarly, making downward social comparisons to others in a worse-off situation has been shown to lead to improvements in mood (Buunk & Hoorens, 1992). The use of downward comparisons has been reported in women with breast cancer (Taylor, 1983) and asthma patients, for whom the use of downward comparisons seemed to reinforce self-esteem (Adams, Pill, & Jones, 1997). Downward comparisons represent efforts to regulate negative emotions by making the person feel better in comparison with worse-off others (Wachters-Kaufmann, 2000). Several participants in this study sought to reduce emotional distress by comparing themselves to others they perceived to be less fortunate than themselves. This finding is in accordance with Affleck, Tennen, Pfeiffer, & Fifield, (1988) and DeVellis, Holt, Renner, Blalock, Blanchard, Cook, (1990) who found downward comparison to be associated with self-enhancement and positive psychosocial well-being among people with arthritis.

Downward comparisons are considerably more frequent than upward comparisons among cancer patients (Wood, Taylor, & Lichtman, 1985). Studies involving women with breast cancer show that the overwhelming majority of women consider their prognosis and adjustment to be better than other breast cancer patients (Taylor, Falke, Shoptaw, & Lichtman, 1986). Furthermore, in the absence of a known target with which to compare downwards, Taylor (1983) found that people will often construct a mythical other with which to compare themselves favourably. Since most people hold more positive views and less negative views about themselves compared to others and that it is "...logically impossible for most people to be better than others" (Taylor & Brown, 1988). Taylor & Brown (1994) consider this as evidence of positive illusions. In their review, Taylor & Brown (1988) highlight three overlapping areas of positive illusions: unrealistically positive views of the self, exaggerated perceptions of personal control and unrealistic optimism. They further present evidence for a relationship between positive illusions and mental health. It is not clear whether the downward comparisons reported by ex-professional footballers represent "unrealistically positive views of self" as it may be the case that they selected targets which they and observers would regard as objectively worse off. In fact, two respondents selected comparison targets in Christopher Reeves (the actor who due to a horse-riding accident is now a quadriplegic) and Tommy Smith (an ex-player with extremely severe health problems) who would be considered to be worse off and thus suggestive of realistic positive views of self.

Another unexpected finding was the self-deprecating humour employed by some participants in coming to terms with their OA. Other writers have noted that footballers' identities are shaped by being immersed in an environment which is akin to "an extended boys' club" and one which values banter and mickey-taking (Gearing,1999). Retaining contact with former team mates at formal 'old boys' functions or at football matches helped to retain an element of this valued social interaction.

Limitations

The sample population was small, self-selected and gave the impression that participants were coping adequately. Therefore, it is possible that the results are not generaliseable to other ex-players with OA. However, the consensus across views expressed (i.e. saturation evident at 12 interviews) and the concordance of some of the career-related findings, which were similar to those reported by Roderick et al. (2000), serve to minimise the weakness of the sample size. Miles & Huberman (1994) suggest that there is a tendency for qualitative research methodologies to exhibit an 'elite bias', meaning that participants tend to be the most articulate and accessible members of the group thus questioning the representativeness of the research findings. However, an elite bias can be said to be inherent within all employed research methodologies, not just those that are qualitative in nature.

Gearing (1999) has argued that footballers who have not had their careers curtailed for any reason, such as enforced premature retirement through injury, are more likely to adapt better to a life outside of the game. All participants in this study played out a full professional career and therefore, although there was an understanding that their current health problems were inextricably linked to playing football, they bore little resentment towards the game and adopted a sanguine approach to their current health problems. Some participants were also cognizant of their health problems being a natural consequence of the ageing process. Further studies of this nature would benefit from including ex-players who had been forced to retire prematurely from football or who had developed OA at an earlier age. Younger ex-players with OA may find the disease more difficult to accept and therefore be less able to cope, or cope in a different way to the participants in this study.

5.6 CHAPTER SUMMARY

The primary focus of this qualitative study was to describe the experience of living with OA from the perspective of ex-professional footballers in the United Kingdom. The findings are grounded in the participants' own realities and as such have provided an insight into the lived experience of ex-professional footballers as they seek to accommodate to a life of pain, disability and functional impairment. Participants managed the threat of the disease by drawing heavily on their experiences and memories of playing professional football. These findings concur with Roderick et al. (2000) in that playing with pain and injury is a "central aspect of the culture of professional football" (p169). It is ironic that the attitudes and attributes (e.g. ignoring pain, overcoming adversity, stoicism) that enabled participants to cope with their OA were those which originally exposed them to the risk of developing OA during their playing career.

Phase I results identified OA as a major health issue for ex- professional footballers in the UK. Pain was the most commonly reported problem, irrespective of OA status, and was associated with elevated levels of anxiety and depression. Not all ex-players who were in pain reported depressive symptoms. The results from Phase II described pain coping strategies employed by ex-professional footballers. Despite the presence of quite severe pain and OA-related disability, participants coped quite well by adopting a range of strategies including acceptance, emotional support, social comparison and humour.

The results from both Phase I and II have identified pain to be a pervasive problem that professional footballers have to cope with during their career and in later life. In Phase III. The data from the interviews were used to inform the design of a questionnaire which was used to investigate the relationship between pain, coping and psychological distress.

CHAPTER 6.0
THE RELATIONSHIPS BETWEEN PAIN, PAIN COPING AND PSYCHOLOGICAL DISTRESS.

6.1 OVERVIEW

The results from the Phase I survey identified OA as a major health issue for ex-professional footballers in the UK. Pain was the most commonly reported problem, irrespective of OA status, and was associated with elevated levels of anxiety and depression. Pain is a stressor with which people have to cope (Hopman-Rock et al.,1998). Not all ex-players who were in pain reported depressive symptoms, possibly reflecting differences in pain coping strategies employed. Interview data from Phase II explored some of these pain coping strategies.

The aim of Phase III of the research was to investigate the experience of living with pain from the perspective of ex-professional footballers. The data from the interviews were used to inform the selection of measures used to investigate the relationships between pain, coping and psychological distress using a quantitative approach.

6.2 AIM

This part of the research was undertaken to investigate the relationships between pain, pain coping strategies and psychological adjustment among ex-professional footballers who reported pain symptoms during the last month. Due to the exploratory nature of this study, no specific hypotheses are stated. However, it was expected that in general pain would be positively associated with psychological distress and that some coping strategies (i.e. active or problem-focused) would be associated with less psychological distress.

6.3 METHODS AND PARTICIPANTS

The study employed a cross-sectional survey design. Data were gathered via a self-administered postal survey. The study sample was recruited through a Former Players Association (FPA) which was not a recruitment source in Phases I and II as they agreed to assist with the study after data collection for these phases was completed. Due to the content overlap of the questionnaire in Phase I and this Phase, which might discourage respondent participation, the four FPAs from Phases I and II were not approached.

One hundred and one ex-professional footballers with either knee, ankle, back or hip pain during the past month took part in the survey. Initially, 300 questionnaires were sent out. Forty-six potential participants had died or were unable to complete the questionnaire because of illness. Five questionnaires were returned unanswered due to incorrect/incomplete postal address. Therefore, the response rate was 41% (i.e. 101 out of a potential sample of 249). Of course, this is a conservative estimate because the sample of 249 will undoubtedly comprise some ex-players who did not experience pain in the last month and therefore were not eligible for the study.

Questionnaire (See Appendix 1)

The questionnaire sought information about the following:

Demographics and career details

Age, age at retirement, reason for retirement, career length, number of games played, position played, OA diagnosis.

Chronic pain

Chronic pain has been defined as pain that persists beyond normally expected healing time (Bonica, 1985), pain that continues a month or more beyond the usual recovery period for an illness or injury or pain that goes on over months or years as a result of a chronic condition. It may be continuous or come and go. Pain was assessed in terms of severity, impact and duration. Participants were asked if they had experienced knee, hip, ankle or back pain during the last month. These joints were chosen as they were the ones most commonly reported by respondents in the Phase I survey to be affected with OA, and therefore were probably painful. Recent pain was chosen to assist participants' ability to recall accurately symptoms, affect and pain coping strategies, thus increasing the reliability and validity of the findings. The 4-item pain subscale of the Arthritis Impact Measurement Scale (AIMS) (Meenan, Gertman, Mason, 1980) was used to measure pain severity. The items measure pain intensity, pain severity, morning stiffness and presence of pain in more than two joints. Each item is scored 1-6, in the direction of less pain and then reverse scored so that when the scale items are added to give a total scale value between 4 and 24 a high score indicates more pain. The pain subscale of AIMS has been validated among patients with rheumatic diseases (Meenan, Gertman, Mason, 1980). The internal reliability coefficient (Cronbach's alpha) was .85 for this study. An inspection of the individual items showed consistency across all four items with means ranging from a high of 3.9 (SD 1.1) for pain intensity to a low of 3.03 (SD 1.6) for morning stiffness. Further there were no floor or ceiling effects on any of the items. In Phase II it was shown that respondents often voiced more concerns over how pain impacted on other life domains rather than merely the presence of pain. Pain impact was assessed using an item adapted from the Medical Outcomes Study (MOS) Short-Form Health Survey (SF-36) (Ware & Sherbourne, 1992): participants were asked to rate the impact of pain by indicating whether their quality of life was "excellent", "very good", "good", "fair" or "poor" with initial scores ranging from 1 ("excellent") to 5 ("poor"). Scores are then reversed and then transformed to a 0 to 100 scale, with higher scores indicating better quality of life. Participants were also asked how old they were when they first experienced their pain symptoms.

Pain coping strategies

Coping strategies were measured using the shortened version of the COPE (Carver, 1997) and a self-constructed social comparison scale. The COPE was chosen because it is relatively short, only 28 items, fairly comprehensive and measures some of the coping strategies (e.g. acceptance, humour, positive reframing) that participants described during Phase II interviews. The scale comprises 14 different coping strategies. Each strategy is measured by two items that are each scored on a scale of 0-3, anchored by *"I usually don't do this at all"* and *"I usually do this a lot".* The two items are summed to give a total scale score of 0-6 with higher scores indicating greater use of that strategy. Participants were asked to say how often they used each of the coping strategies when they experienced pain during the previous month. Studies using other pain coping questionnaires (e.g. CSQ) have found that individual scales provide more accurate, detailed information than composite scores about the specific relationship between coping and adjustment (Jensen et al., 1992). All of the COPE subscales met the minimally acceptable reliability value of .50. Subscale alphas ranged from a high of .91 for substance abuse to a low of .59 to emotional venting. All of the following subscales were used in this study:

- *Active coping*: taking action, and exerting efforts, to remove or circumvent the stressor.
- *Planning*: thinking about how to confront the stressor, planning one's active coping efforts.
- *Instrumental social support*: seeking assistance, information, or advice about what to do.
- *Emotional social support*: getting sympathy or emotional support from someone.
- *Religion*: increased engagement in religious activities.
- *Positive reframing:* making the best of the situation by growing from it, or viewing it in a more favourable light.
- *Acceptance*: accepting the fact that the stressful event has occurred and is real.
- *Emotional venting*: an increased awareness of one's emotional distress, and a concomitant tendency to discharge those feelings.
- *Denial*: an attempt to reject the reality of the stressful event.
- *Self-distraction:* psychological disengagement from the goal with which the stressor is interfering, through turning to other activities, day-dreaming, sleep or self-distraction.

- *Behavioural disengagement*: giving up, or withdrawing effort from, the attempt to attain the goal with which the stressor is interfering.
- *Substance abuse*: using alcohol or drugs to cope. Participants were instructed to report use of recreational drugs only as opposed to over- the- counter or prescribed painkillers.
- *Self-blame*: criticising and blaming oneself for the stressor.
- *Humour*: making fun and jokes about the stressor.

Several participants in Phase II described using social and temporal comparison as a way of coping with their OA-related pain. A recent editorial in a health journal emphasized the importance of social comparison research (Buunk, Gibbons, & Visser, 2002). Most social comparison research has been laboratory-based and there is a dearth of measures which are appropriate for more naturalistic research settings (DeVellis et al., 1990). Therefore, social and temporal comparison was measured using a self-constructed scale comprising 5 items. (See Appendix 1, Phase III questionnaire for full list of items). Participants were asked to indicate how often they used social comparison when in pain during the previous month. Items were scored 1-7 anchored by *"never do that"* and *"always do that"*. Higher scores indicate greater frequency of use. Item examples include: comparing self to someone with worse pain (downward comparison), or less pain (upward) and comparing self now to self in the past without pain (temporal comparison). Two items (comparisons with someone known to the respondent in worse pain and comparisons with someone not known to the respondent in worse pain) assessed downward comparison. The correlation between these two items was high ($r = .70$) and so scores were added together to form a two-item downward comparison scale used in all analyses (Tabachnik & Fidel, 2001, p. 84). This procedure was repeated for two further items which were similarly highly correlated (comparison with someone known to the respondent in less pain and comparisons with someone not known to the respondent in less pain) Cronbach's alphas for downward and upward comparison scales were .82 and .80 respectively.

Perceived pain control

Perceived control over pain has been shown to be associated with pain severity, choice of coping strategy and psychological distress. Perceived pain control was assessed in two ways Two single item measures from the Coping Strategies Questionnaire (CSQ; Rosentiel & Keefe,1983) assessed how much control participants have over pain (0 = "*no control*", 6 = "*complete control*") and how much they are able to decrease pain (0= "*can't decrease*", 6= "*can decrease it completely*"). Higher scores indicate greater control over pain and greater ability to decrease pain.

Psychological distress

Many psychological distress measures are burdensome to complete. The Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith,1983) was used to counter this shortcoming. The HADS has 14 items, 7 representing anxiety and 7 depression. Each item is scored on a four-point scale (0-3). Appropriate scores are summed to form separate total scores (range 0-21) for anxiety and depression. Higher scores indicate greater anxiety or depression Evidence from the clinical literature shows that patients often experience anxiety and depression together at the same time, a finding which is supported by the high correlation between questionnaire based assessments of anxiety and depression (Eaton & Ritter, 1988). In this sample, the correlation between the anxiety and depression scales was high ($r = .70$) and so following the advice of Crawford, Henry, Crombie, & Taylor (2001) the scales were combined to obtain a measure of general psychological distress (range 0-42).

Analysis

The relationships between pain, pain coping strategies and psychological distress, were examined in the following ways. Bivariate zero order correlations were computed for the whole sample. The mean pain severity score was used to divide the sample into low (<13) and high pain (≥13) groups and independent t-tests and correlations were conducted to examine relationships in coping and psychological distress by level of pain severity. Finally, a hierarchical regression analysis was conducted to determine the effects of coping strategies on psychological distress after controlling for pain variables, as suggested by Keefe et al. (1992). Predictor variables were entered in two steps: a) pain variables, and b) pain coping strategies. The residuals plot was normally distributed thus examination of the individual variables for normality was obviated (Tabachnik & Fidel, 2001).

Due to the exploratory nature of this study the significance level was set at 5%. The Statistical Package for the Social Sciences V11 (SPSS Inc, Chicago, Illinois, USA) was used to perform all data analyses.

6.4 RESULTS

Fifty-two (52%) respondents had representative honours and of these, 33 (63%) had been senior internationals. The majority of players (66%) had, at some time in their professional career, played in the Premier Division (formerly Division 1). The majority of respondents were forwards (40%), with the remainder comprising defenders (33%), midfield players (22%) and goalkeepers (5%). Nearly half (48%) of the respondents retired because of injury.

Table 6.1 presents some demographic characteristics of the sample. The mean age was 60.6 years (SD 11.4 years) and the mean age at retirement from professional football was 32.6 years (SD 4.7 years). The majority were married or living with a partner and were Caucasian; just over a third had some formal educational qualifications.

Table 6.1. Background characteristics (N =101)

Variable	Mean (SD)
Age (years)	60.5 (11.4)
Age retired from football	32.6 (4.7)
	%
Married/living with partner	87
Ethnicity (Caucasian)	97
Education	34
Employment	46
Osteoarthritis	58

Table 6.2 provides information about the participants' pain symptoms, general health, psychological distress and joints affected by pain. Despite the presence of pain, over three quarters (76%) of all participants rated their general health as *'good'* or better (mean 60.7, SD 25.3). Only one participant reported pain symptoms of less than 1 year. Over half (59%) of all participants had pain in at least 2 joints. Over half (58%) of all respondents reported having OA in at least one joint. There are well established HADS cut-off scores (>10) for the separate anxiety and depression subscales indicating probable mood disorder. The incidence of clinical anxiety and clinical depression was 16% and 7% respectively.

Table 6.2. Health status variables

Variable	Mean (SD)
Pain severity (Scale 4-24, ↑ = worse)	13.26 (5.1)
Pain impact on quality of life (Scale 0-100, ↑ = better)	60.7 (25.3)
Pain duration (years)	17.3 (11.4)
Age at onset of pain (years)	42.9 (13.6)
HADS: Psychological distress (0-42 ↑ = worse)	11.9 (7.0)
	%
Knee pain	77
Back pain	55
Hip pain	32
Ankle pain	28
Pain > 1 joint	59
OA	58

COPE

Table 6.3 shows that the most commonly used coping strategies were acceptance (mean 4.3, SD 1.8) and active coping (mean 2.9, SD 2.0). The least intensively used coping strategies were substance abuse (mean .61 SD 1.4) and behavioural disengagement (mean .53, SD 1.3).

Social and temporal comparisons

Participants were more likely to use temporal comparisons – remembering a time when they were free from pain (mean 3.4, SD 2.2) and downward social comparisons - comparing themselves to others they knew who were in worse pain (mean 3.0, SD 2.1) (see Table 6.4). They were least likely to compare themselves to others who they did not know who were in less pain (mean 1.4, SD 1.1).

Pain control

Participants felt moderately in control of their pain (mean 3.1, SD 1.6), but generally felt that they were unable to decrease their pain (mean 2.8, SD 1.4) (see Table 6.3).

Table 6.3. Mean scores of COPE and pain control variables

Variable	Mean (SD)
COPE: (Scale 0-6, ↑ = greater use)	
Acceptance	4.3 (1.8)
Active coping	2.9 (2.0)
Planning	2.3 (1.9)
Self-distraction	2.2 (1.9)
Emotional support	1.9 (1.9)
Positive reframing	1.9 (1.9)
Humour	1.8 (1.9)
Informational support	1.6 (1.7)
Emotional venting	1.0 (1.4)
Self-blame	.91 (1.4)
Religion	.91 (1.5)
Denial	.78 (1.5)
Substance abuse	.61 (1.4)
Behavioural disengagement	.53 (1.3)
PAIN CONTROL: (scale 0-6, ↑ = better)	
Control pain	3.1 (1.6)
Decrease pain	2.8 (1.4)

Table 6.4. Mean scores on social and temporal comparison ratings

Social and temporal comparison (scale 1-7, ↑ = more likely to compare)	Mean (SD)
Compare myself to a time when **I was free** from pain and or other health problems.	3.4 (2.2)
Compare myself to someone I know personally who has **worse** pain and/or health problems than me.*	3.0 (2.1)
Compare myself to someone I don't know personally who has **worse** pain and/or health problems than me (e.g. Christopher Reeve).*	2.7 (2.1)
Compare myself to someone I know personally who has **less** pain and/or health problems than me.**	1.6 (1.4)
Compare myself to someone I don't know personally who has **less** pain and/or health problems than me.**	1.4 (1.1)

* Items summed for analyses - *downward social comparison* - mean 2.8, SD 1.9.

** Items summed for analyses - *upward social comparison* - mean 1.50, SD 1.1.

Bivariate correlations

The participants' age correlated with just two study variables. Older participants had had pain for longer (r =.31, p=.003), and used less informational support as a coping strategy (r=-.23, p=.03). There were no significant relationships between marital status or education on any of the study variables. Having OA was weakly associated with only three study variables: more pain (rho=.29, p=.003), more use of acceptance (rho=.37, <.001) and active coping (rho=.29, p=.003).

Greater psychological distress was significantly, positively associated with pain severity (r=.47, p<.01) and longer duration of pain (r=.34,p=.001) (see Table 6.5). That is, participants who were in more pain and had a longer pain duration were more likely to be psychologically distressed. Participants who appraised their quality of life as worse because of pain (r=-.47, p<.001) and felt unable to control their pain (r=-.32, p=.001) reported more psychological distress.

Pain severity was significantly associated with the use of the following coping strategies: acceptance, active coping, planning, self-distraction, emotional support, positive reframing, emotional venting, denial, religion, behavioural disengagement, upward comparison and temporal comparison. The more pain the participants experienced, the more they used a particular coping strategy. All of the COPE variables, except humour, were significantly, positively correlated with psychological distress (see Table 6.5). The more the participants used acceptance, active coping, planning, self-distraction, emotional support, positive reframing, informational support, emotional venting, self-blame, denial, religion, substance abuse and behavioural disengagement to cope with their pain, the more psychologically distressed they were. Psychological distress was also positively associated with the use of more downward social comparison, upward social comparison and temporal comparison.

Table 6.5. Correlations for pain variables, COPE variables, social comparison variables and psychological distress variables.

Variable	Pain Severity	HADS
Pain severity		
HADS	.47**	
Pain duration	.39**	.34**
Pain impact on quality of life	-.34*	-.47**
Acceptance	.29**	.28**
Active coping	.30**	.33**
Planning	.26*	.26*
Self-distraction	.32**	.29*
Emotional support	.38**	.32**
Positive reframing	.23*	.23*
Humour	.18	-.01
Informational support	.17	.22*
Emotional venting	.25*	.47**
Self-blame	.19	.28*
Denial	.26**	.41**
Religion	.27**	.34**
Substance abuse	.12	.26**
Behavioural disengagement	.23*	.32**
Downward comparison	.16	.29**
Upward comparison	.28**	.43**
Temporal comparison	.27**	.42**
Control pain	-.36**	-.32**
Decrease pain	-.30**	-.17

* P<.05, **P<.01

Relationship between pain, coping and psychological distress by pain severity.

Table 6.6 shows that there was greater use of nearly all coping strategies among the high pain group compared to the low pain group. The high pain group was significantly more psychologically distressed and less able to control and decrease their pain than the low pain group (Table 6.6).

There was no relationship between pain severity and psychological distress and no relationship between pain severity and any coping strategy in the low pain group. In the high pain group, pain severity was associated with psychological distress, active coping, denial, planning, and self-distraction. In the low pain group, psychological distress was positively associated with six coping variables (behavioural disengagement, emotional support, emotional venting, positive reframing, self-blame, and temporal comparison) and negatively associated with pain control. Psychological distress was positively associated with 9 coping variables (active coping, behavioural disengagement, denial, emotional venting, religion, substance abuse, downward comparison, upward comparison and temporal comparison, in the high pain group.

Table 6.6. Differences in study variables between low and high pain groups

Variable	**Low pain group (N= 47)**	**High pain group (N= 54)**			
	Mean (SD)	**Mean (SD)**	**t**	**df**	**P * Value**
COPE: (Scale 0-6, ↑ = greater use)					
Acceptance	3.6 (1.9)	4.9 (1.5)	3.6	97	. 001
Active coping	2.4 (2.0)	3.2 (1.9)	2.0	97	. 049
Planning	1.9 (1.85)	2.7 (1.98)	2.1	97	.038
Self-distraction	1.6 (1.6)	2.7 (2.0)	2.9	97	.005
Emotional support	1.3 (1.5)	2.5 (2.1)	3.3	96	.002
Positive reframing	.67 (.47)	.70 (.46)	.39	97	.696
Humour	1.6 (1.7)	1.9 (1.9)	.80	97	.427
Informational support	1.8 (1.3)	2.0 (1.9)	2.5	97	.014
Emotional venting	.73 (1.2)	1.3 (1.5)	2.0	96	.050
Self-blame	.62 (.86)	1.2 (1.7)	1.9	97	.059
Religion	.51 (1.1)	1.3 (2.0)	2.3	97	.026
Denial	.44 (1.1)	1.1 (1.8)	2.1	97	.042
Substance abuse	.40 (.94)	.81 (1.6)	1.5	96	.140
Behavioural disengagement	.27 (.78)	.76 (1.5)	2.0	97	.053
PAIN CONTROL: (scale 0-6, ↑ = better)					
Control pain	3.7 (1.6)	-2.7 (1.4)	3.2	97	.002
Decrease pain	3.2 (1.6)	-2.5 (1.2)	2.5	97	.15
HADS: Psychological distress (0-42, ↑ = worse)	9.0 (5.1)	14.2 (7.5)	4.0	97	.005

* Independent t-test

Predicting psychological distress

It was necessary to restrict the number of independent variables in order to maintain an acceptable ratio of the number of cases per variable entered into regression analysis (rule of thumb is that the number of independent variables should not exceed 10% of cases). Missing data on some variables reduced the sample size. This resulted in eight predictor variables (see Table 6.7). Predictor variables were entered in two steps: step 1) pain variables: (pain severity, pain impact on quality of life, and step 2) pain coping variables with the highest correlations with psychological distress and which were also correlated with pain were included in step 2: (religion, denial, emotional venting, active coping, temporal comparison, upward comparison and emotional support). As already noted, no demographic variables (age, marital status, education, OA status) correlated with pain and psychological distress and therefore these were excluded from further analysis. Table 6.7 summarises the results of the regression analysis for psychological distress. Pain variables were entered in Step 1 and explained 34% of the variance in psychological distress. (*F*, 2, 96 = 23.66, p<.001). In Step 2, after controlling for pain variables, coping variables accounted for a further 22% of the variance (*F*, 8, 96 = 14.08, p= <.001). Thus, the full model accounted for 56% (adjusted R^2 = 52%) of variance in psychological distress. In the full model, pain impact on quality of life (p<.001), emotional venting (p<.05), denial, (p<.005) and upward comparison (p<.005) were significant predictors of psychological distress. Pain severity was a marginally significant predictor in the final model (p=.06). After controlling for pain variables, active coping, religion, and temporal comparison did not predict psychological distress. Thus, the greater the impact of pain on general health, and more use of emotional venting, denial, active coping and upward comparison, the greater the psychological distress.

Table 6.7. Regression analysis for psychological distress

Variable		**R^2**	**AdjR^2**	**F Change**	**R^2 Change**	**Step 1**	**Step 2**
Step 1	*Pain variables*						
	Pain severity					.35***	.16
	Pain impact	**.34**	**32**	**23.66**	**34*** **	-.36***	-.30**
Step 2	*Coping variables*						
	Religion						-.07
	Denial						.25**
	Emotional venting						.19*
	Active coping						.17
	Temporal comparison						.10
	Upward comparison	**.56**	**.52**	**14.07**	**.22*** **		.23**

* p<.05, ** p<.005., ***p<.001

6.5 DISCUSSION

This phase of the research examined the relationships between pain, coping and psychological distress among a sample of ex-professional footballers. In the general stress and coping literature, it has been argued that the use of a particular coping strategy will be determined by whether the stressor is considered to be controllable and/or changeable. Stressors not amenable to change are considered to require a more emotion-focused approach, while stressors which have changeable aspects should invoke a problem-solving approach (Schussler, 1992). The stressor under investigation in this study was the experience of pain in the recent past. In general, participants felt moderately able to control their pain but they were less confident about being able to decrease (change) pain. The findings from this study are consistent with much of the pain coping research, which has shown that perceived pain control is inversely correlated with pain severity and psychological distress (Affleck et al., 1987).

Participants used a mix of emotion-focused and problem-focused coping strategies supporting Carver et al's. (1989) belief that most stressful situations are coped with by adopting a range of strategies. Several of the coping strategies were used infrequently or not at all by some of the respondents. A similar finding was reported by Tennen & Affleck (1997) among patients coping with RA pain. Acceptance, often categorised as an emotion-focused strategy, was the most intensely used COPE pain coping strategy. It is possible that high levels of acceptance of pain reflect the lack of success of the other coping methods in controlling and /or decreasing pain and therefore represents an appraisal rather than a coping strategy. A more likely explanation is that ex-professional footballers become habituated to experiencing pain. Results from Phases I and II, and elsewhere (e.g. Waddington et al., 2001), showed that pain was a pervasive problem throughout much of a professional footballer's life and that accepting pain and injury was an important element of the risk culture inherent in professional football. Downe-Wamboldt (1991) reported similar high levels of acceptance among her sample of elderly women with OA who reported pain as their primary problem. A study of patients with severe spinal cord injuries, a condition not amenable to change, also found that acceptance was the strategy used most, both immediately after sustaining the injury and up to seven years later (Kennedy, Lowe, Grey, & Short, 1995). In a series of predictive analyses, acceptance was negatively associated with a range of psychosocial variables including depression, hopelessness, anxiety and psychological distress.

The positive relationship between problem-focused coping strategies (e.g. active coping, planning self-distraction) and psychological distress in this study is interesting. Several studies have shown that these types of problem-focused coping are usually negatively associated with and predictive of less psychological distress (Brown, & Nicassio, 1987). However, there are studies which found no relationship between problem-focused coping and psychological distress (Lambert, 1985) and other studies which have found a positive relationship between active coping and psychological distress (Endler et al., 2003; Kennedy et al., 1995). Kennedy et al. (1995) contend that problem-focused coping might not be adaptive in situation where the stress is chronic and ongoing. Vitialano et al. (1990) found that problem-focused coping was only associated with less psychological distress among patients who considered that their problem was alterable. Unfortunately, the cross-sectional design of this study precludes any firm conclusions about the temporal ordering of the study variables. However, it seems plausible that pain episodes initiate all types of coping including problem-focused coping strategies, which may be unsuccessful in controlling and/or reducing symptoms, resulting in elevated levels of psychological distress. The results from this study seem to confirm this as those in greater pain tended to use pain coping strategies more frequently (Table 6.6). It cannot be ruled out, however, that pain episodes increase anxiety about possible likelihood of disability, which in turn initiate coping strategies as a response.

Studies have shown the importance of social support in coping with chronic health complaints (Brown, Andrews, Harris, Adler, & Bridge, 1986; Holahan & Holahan, 1987). Many participants in this study used instrumental support and/or emotional support. Seeking emotional support when in pain was one of the more frequently used coping strategies, and given that most of the participants were married or cohabiting it is likely that they sought it from their partners. The fact that seeking emotional support was positively associated with psychological distress could be because it signalled to caregivers an inability to cope with pain, thus posing a threat to their role within the relationship. Gray et al. (2000) suggest that traditional masculine role expectations prevent participants from acknowledging vulnerability and emotional distress as they conflict with their identities as men.

Consistent with findings reported by Affleck et al. (2000), participants used more temporal comparisons when in pain than any other forms of social comparisons, such as upward or downward. Ex-players are a unique cohort in that they are often reminded by the general public, and in some cases archival (e.g. media footage, sports photographs) material, of their former status as a professional athlete, and so it is understandable that they contemplated a period of their lives when they were without pain and disability.

It is unclear whether participants sought to reduce psychological distress by recalling better times, or whether comparing their current health status with their former health status led to distress. Conceptually, this type of coping is similar to the emotion-focused, wish-fulfilling fantasy coping strategy which describes a longing for pain and illness to disappear. Felton et al. (1984) found that RA patients, more so than hypertension, diabetes and cancer patients, used wish-fulfilling fantasy. Independent of diagnosis, wish-fulfilling fantasy was also predictive of more negative affect.

Prediction of psychological distress

It is important to remember that few respondents experienced clinical psychological distress (as assessed by HADS cut-off scores). Murphy, Dickens, Creed, & Bernstein (1999) reported HADS scores for 'probable depression' (>10) among 17% of patients with arthritis compared with a comparable figure among this sample of 7%. Using the lower HADS cut-off scores (8-10), Barlow, Macey, & Struthers (1993) found that 46% of patients with ankylosing spondylitis, a rheumatic condition which is more common among males, reported 'possible depression'. The prevalence is more than twice that found among this sample of ex-professional footballers (22%). Even taking into account the inclusion of women, who are more likely to report psychological distress, in the Murphy et al. (1999) and Barlow et al. (1993) studies, the figure for this sample appears low.

The hierarchical regression analyses indicated that the impact of pain on general health and the coping strategies of denial, emotional venting and upward comparison are more important than pain severity when examining their impact on psychological distress. The finding that it is the impact of pain on quality of life rather than pain *per se,* which is a stronger predictor of psychological distress, supports the inclusion of this variable in future studies.

For many people with chronic pain the symptoms do not occur in a vacuum rather they interfere with normal psychosocial functioning (e.g. work, relationships) (Keefe et al., 1992; Turner, Barlow, & Williams, 2002).

An expected finding, and one that is consistent with other stress and coping research (Tennen & Affleck, 1996) is the relationship between emotional venting (i.e. expressing negative thoughts and saying things to let unpleasant feelings escape) and psychological distress. Although it cannot be ascertained what the form or content of the negative statements used by the participants were, it would appear that negative venting is conceptually similar to catastrophising. It is not clear, given the cross-sectional design, whether emotional venting gives rise to psychological distress or whether it is simply a verbal report of psychological distress. However, one can speculate about the possible relationship between pain, emotional venting and psychological distress. Persistent pain, which fails to respond to participants' coping efforts, and which eventually results in a reduced quality of life, could engender feelings of hopelessness and anger. Participants' anger could manifest itself in negative oral outbursts. Cipher, Fernandez, & Clifford (2002) reported less compliance with pain treatment and poorer functional outcome among patients who expressed more negative emotion. Revenson & Felton (1989) reported decreases in positive affect among RA patients who used self-blame, wish-fulfilling fantasy and emotional venting. Gil et al. (1999) found a relationship between negative social cognitions such as "no-one cares about my pain" and depression among a group of chronic pain patients. Continued expression of negative feelings might also erode and/or antagonise social support. Some support for this hypothesis was provided by Griffin, Friend, Kaell, & Bennett (2001), who found a positive association between emotional venting and punishing responses (e.g. angry, irritable) from caregivers of RA patients. Findings also indicated that those who perceived punishing responses from caregivers and coped by emotional venting reported increased negative affect over time. There is growing interest in the involvement of spouses and family members in supporting chronic pain patients. Keefe, Caldwell, Baucom, Salley, Robineson, Timmons et al. (1996) found that spouse-assisted pain coping skills training, which emphasized effective communication skills, was effective in reducing pain, psychological distress and pain behaviour in OA patients.

Upward comparison (comparison with others who were in less pain) was predictive of greater psychological distress. Although upward comparisons with persons who are in less pain can constitute a method for obtaining hope and inspiration, it is probably the case for respondents in this study that the opposite view prevailed and that comparisons with others in less pain tended to reinforce feelings of hopelessness and despair in recognition that attempts at controlling and/or reducing their own pain are ineffective.

Respondents in Phase II spoke of how they were encouraged to ignore pain and injury during their career so, it is perhaps not surprising that some participants continued to deny their pain in later life. It is widely acknowledged in the general clinical literature that denial is a useful coping response to stress (Rowe, 2002). Denial can be adaptive in the early stages of pain, helping a person to gradually assimilate the severity of their problems, without becoming depressed or despondent. Persistent denial, though, is likely to be unhelpful in the long term and deleterious to psychological distress . Denial is an avoidance strategy which diverts attention away from the problem, the implication being that it is possible that either coping attempts are not undertaken or pain would be ignored leading to inappropriate or excessive acts (e.g. excessive exercise) and possibly worsening symptoms.

Methodological considerations

The fact that OA status correlated with few study variables supports the decision to focus on pain symptoms rather than disease diagnosis. Asking participants to report how they coped with a relatively recent pain episode (i.e. during the last month) addresses some of the problems associated with memory distortions. The use of a general coping measure (COPE) rather than a pain specific coping measure permits future research to determine whether participants' coping strategies reported here are specific to pain or are indicative of how ex-players cope with other stressors they may face such as retiring from professional football. The positive associations between social comparison and psychological distress (downward and upward) and temporal comparison and psychological distress are noteworthy and suggests that both should be included in future pain coping studies. In this thesis, in order to minimise the burden on participants, a limited range of coping measures was assessed. Behavioural pain coping scales, particularly those that assess exercise, should also be included in future studies comprising ex-athletes.

Other researchers have factor analysed scores on individual coping subscales and labelled the components either problem-focused coping or emotion-focused coping. This has the advantage of reducing the number of variables to be tested in a regression model and is important where sample sizes are small. However, this has the disadvantage of obscuring which specific coping strategy is the most strongly related to psychological distress. A case in point is a study by Affleck, et al. (1999), which found that OA patients reported less pain after a day during which they used emotion-focused coping. The emotion-focused coping component comprised four strategies; redefinition, venting emotions, seeking spiritual comfort and seeking emotional support, but post-hoc analysis showed that it was the latter strategy alone which predicted less pain the next day. As this thesis was exploratory in nature, it was felt that individual coping items rather than composite scales would be more informative about the specific relationship between coping and adjustment. The advantage of isolating individual coping strategies associated with poorer or better outcome is that interventions can be specifically tailored to either eliminate or encourage these strategies respectively.

The fact that there were stronger, and more, associations between the study variables among those reporting higher pain highlights the importance of pain severity as a potential moderator between coping and psychological distress. After controlling for pain, active coping, religion and upward comparison did not predict psychological distress. This suggests an interaction effect for some coping strategies, which are only associated with psychological distress at high pain levels, a finding which has been reported elsewhere (Brown et al., 1989) . The hierarchical model of regression analysis controlled for important pain-related variables before considering the contribution of coping variables and as such represents a conservative analysis that may underestimate the percentage of variance that can be explained by coping variables. The cross-sectional design limits the conclusions regarding the direction of causality and is the most significant limitation. The sample size also restricted the number of variables included in the regression analysis. To clarify the relationship between pain, coping and psychological distress, longitudinal studies, with larger sample sizes are required.

The use of 2-item scales to measure coping (COPE and Social Comparison) raises questions about adequate domain sampling, reliability and validity (Golden, Sawicki, & Franzen,1990). The shortened COPE however, has been found to have higher Cronbach's alphas than the original 4-item measure and to correlate in a theoretically meaningful way with existing coping with illness measures such as the CHIP (Fillion, Kovacs, Gagnon & Endler, 2002). The Cronbach's alphas for the COPE in this sample were satisfactory as were the Cronbach's alphas for the self-constructed social comparison measure.

6.5 CHAPTER SUMMARY

Living with chronic pain involves a number of difficult and stressful demands. This study showed that ex-footballers used a combination of emotion-focused and problem-focused pain coping methods. Despite the fact that causal direction cannot be established, some of the findings are noteworthy. All coping strategies were positively associated with psychological distress. In the regression model, the three coping strategies that were significant predictors of distress were emotion-focused in nature (denial, emotional venting, upward comparison).

CHAPTER 7.0
SUMMARY, EVALUATION AND CONCLUSIONS

7.1 OVERVIEW

This chapter brings together the key findings from the thesis to provide an account of the impact of OA and pain on the lives of ex-professional footballers in the UK. Part one relates back to the aims of the thesis summarising the background to the current thesis and describing the impact of OA and chronic pain within a stress and coping model. Part two describes the practical implications of the thesis and proposes an appropriate educational intervention which could address some of the psychosocial problems identified. Part three makes recommendations for future investigations.

PART ONE

7.2 BACKGROUND

Arthritis is a leading cause of physical disability in the UK. It is one of the most common chronic diseases, comprising over 200 rheumatic conditions involving the joints and/or connective tissues (Taal et al.,1993) and is the most frequent cause of physical disability. With more than four million people consulting their family doctor each year about arthritis and allied conditions, a significant portion of the general practitioner's (GP) workload is accounted for by rheumatic complaints. Not only is there a considerable societal burden, there is also a personal burden. Common physical symptoms include chronic pain, fatigue and stiffness. In addition, living and coping with OA and chronic pain can involve psychosocial concomitants such as disruption to work activities and social relationships. Several European studies (Klünder, et al., 1980; Kujala et al., 1995; Lindberg, et al., 1993; Roos, 1998) have shown that a career as a professional footballer dramatically increases the risk of not only developing OA and chronic pain but also developing them at an early age. However, what was not established was whether the HRQL of ex-professional footballers was similar or dissimilar to that found among the general population.

It is useful to restate the three main aims of this study and how they were achieved by this thesis.

The first aim was to examine the short-term and long-term physical and psychosocial consequences of playing professional football in the UK focusing in particular on OA and chronic pain. The growing interest in the societal and personal impact of joint disorder and pain has culminated in the Bone and Joint Decade 2000-2010 initiative. Recently, professional football's governing body, the Football Association and the players' union, the Professional Footballers Union, have initiated research aimed at documenting and reducing the short-term (e.g. injuries) and long-term (e.g. chronic disease) consequences of playing professional football. Finally, the psychology of men's health is a growing area of interest in health psychology (e.g. Lee & Owens, 2002). Therefore, this thesis is timely, relevant and of interest to policy makers, academics and research participants. In keeping with one of the key strategies/goals of the Bone and Joint Decade 2000-2010, one aim of this research was to raise the awareness of the burden of musculoskeletal disorders among a group of ex-professional footballers and the impact at a psychological and societal level. The results from Phase I have been peer reviewed and published in a sports medicine journal (Turner, Barlow, & Heathcote-Elliot, 2000) and key findings have been extensively reported by the world's media spawning a series of similar academic and lay investigations. Thus, the first aim of this thesis has been successfully achieved.

The second aim of the thesis was to gain an insight into the experience of living and coping with OA and chronic pain from the perspective of former professional footballers. The rich, qualitative data reported in Phase II captured the lived, unique experience of former professional footballers as they cope with pain and disability. Results from Phase II have also been published (Turner, Barlow & Ilbery, 2002).

The third aim was to examine the experience of coping with chronic pain from the perspective of former professional footballers within a stress and coping model. For the first time in the UK, Phase III results provided a comprehensive account of the relationships between pain, coping and psychological distress among ex-professional footballers.

7.3 SUMMARY OF RESULTS

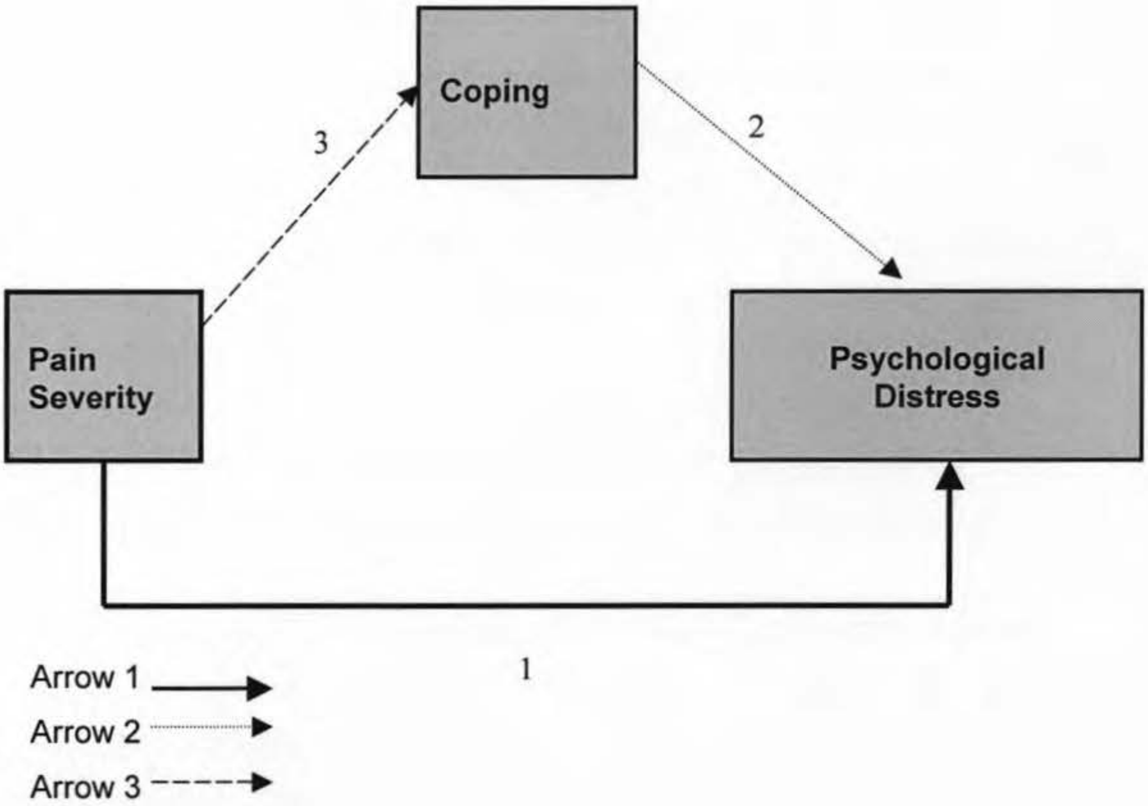
Results from Phase I confirmed professional football as a high risk occupation in terms of injury and disability. OA was identified as a major health issue for many ex-professional footballers in the UK. The survey established that OA had a considerable impact on many ex-players' HRQL in terms of pain, mobility, activity level and work disability. The primary focus of Phase II was to describe, in-depth, the experience of living with OA. The findings are grounded in the participants' own reality and showed that, despite the presence of quite severe pain and OA-related disability, participants retained a positive mental attitude. The results from both Phases I and II identified pain to be a pervasive problem for professional footballers during their career and in later life, but one which they accepted as a price worth paying. Phase II interview findings were used to inform the design of a questionnaire in Phase III, which investigated the relationships between pain, coping and psychological distress. It was shown that the prevalence of severe psychological distress was relatively low in this sample of ex-professional footballers living with OA and chronic pain. Nearly all coping strategies were positively associated with psychological distress. Regression analyses showed impact of pain on general health rather than pain *per se* and the coping strategies of denial, upward comparison and emotional venting to be the strongest predictors of psychological distress. In summary, the results tend to confirm Endler et al.'s (2003) assertion that "few if any coping styles are positively predictive of good adjustment and less distress in chronic pain patients" (p.342).

7.4 STRESS AND COPING MODEL

Lazarus and Folkman's (1984) stress and coping model states that how a person copes with a stressor will have an outcome on adaptation. This model, along with results from Phase II, guided the research design and analysis in Phase III. Pain was conceptualised as the stressor and level of psychological distress was conceptualised as adaptation. The order of the variables in the regression model was based on recommendations made in the pain coping research literature; that is controlling for pain variables before entering coping variables. One of the purposes of research into coping is to identify adaptive coping skills that can be passed on to patients via patient education and as a practical diagnostic tool with which to identify those most at risk from poorer outcomes. (Zautra & Manne, 1992). The results from Phase III did not uncover any adaptive coping strategies. In fact, the results only suggest which coping strategies are probably best abandoned, particularly by those people experiencing greater pain. Controlling for pain is an important methodological strength of this study, not always performed in this type of research. Studies which do not control for pain levels may inflate the relationship between coping and psychological distress.

The variables included in this thesis are not intended to be a comprehensive and definitive examination of the stress and coping model as applied to a chronic pain population. In the stress and coping model, appraisal comprises two processes. In primary appraisal a person evaluates the degree of threat or risk, whereas in secondary appraisal a person evaluates what coping strategies would be best suited to reducing the threat. Often these two processes occur simultaneously. Affleck, Tennen, Pfeiffer, & Fifield (1987) showed that threat appraisal is both related to coping responses and psychological distress. This thesis focused primarily on coping responses rather than appraisals, although perceived pain control has been conceptualised by some authors as an appraisal process rather than a coping response (Keefe et al., 1992). Hampson et al. (1996) acknowledge there are benefits to testing a simple model when approaching a new area. The relationships between pain severity, pain coping and psychological distress, as reported in this thesis, are shown in Figure 7.1. The relationships in the model can be summarised thus: pain and coping have direct effects on psychological distress (Arrow 1 and Arrow 2). These relationships also conformed to a mediational model (Arrow 3) in which coping strategies partially mediated the effects of pain on psychological distress. Although not tested in this thesis, there was evidence to suggest a moderation model in which pain severity and coping interact on psychological distress. It is probably the case that severe pain episodes determine the choice of coping strategy.

Figure 7.1. Model of the relationships among pain severity, coping and psychological distress among ex-professional footballers



Regressing pain and coping variables onto psychological distress required an assumption about causality. Obviously, cross-sectional data make assertions about causality and direction problematic. However, it is likely that among this cohort, given the relatively early age at onset and lengthy duration of pain, the likely temporal ordering of variables is that pain is serious enough to warrant the use of coping strategies which impact on psychological distress. Alternatively, psychological distress, often regarded as a dependent variable in stress and coping research (Lazarus & Folkman, 1984), may serve as an independent variable in a complex process of reciprocal transactions over time. The relationships between pain, coping and psychological distress may be multidirectional and mutually reinforcing. Longitudinal studies are needed to clarify these relationships.

Appraisal variables might have greater explanatory power over coping responses and merit inclusion in future studies among this population. Other coping variables not investigated in this thesis included behavioural oriented strategies such as exercise and relaxation. The causes of depression are multifactorial and so it follows that it is not the product of a single causal pathway. Other causes of depression among ex-professional footballers, such as loss of self-esteem, have recently been described. One sports psychologist recently told a newspaper reporter that retirement, which she also compares to a bereavement, for professional footballlers can be more problematic in terms of redefining self-esteem than that experienced by the general population because of the unique and glamorous lifestyle that footballers once enjoyed (Henderson, 2003). It is widely agreed that this situation is exacerbated if the player retires prematurely because of injury.

> " For sports people, the bereavement is not the loss of a crucial person in their life but a loss of status, of the admiration and recognition involved in playing sport for a living, ... That's what hits the hardest. It changes your image of yourself" (Henderson, 2003).

7.5 METHODOLOGICAL CRITIQUE

Combined approach

This was the first study of its kind and thus was necessarily exploratory in nature. Therefore, it was deemed appropriate to investigate the area using a combined methodology. In Phase I, results from a large-scale nationwide postal survey established that the topic under investigation was widespread and merited further attention. Phase II qualitative data produced an in-depth account of the impact of OA and chronic pain and also informed the design of a questionnaire which was used to investigate quantitatively the relationship between pain, pain coping and psychosocial distress in Phase III. The COPE measure was selected as it comprised several coping dimensions which emerged from the qualitative analysis and therefore would be relevant to respondents. Several of the COPE and social comparison subscales which were the most commonly used in Phase III (e.g. acceptance, temporal comparison) were ones also used by the interview respondents in Phase II. Also, the importance of the impact of pain on quality of life was a key finding from both Phase II and Phase III. The credibility of claims about coping responses was strengthened by triangulating qualitative and quantitative data sources. On a personal level, the task of utilising quantitative and qualitative research methods necessarily required the development of different skills which has been a rewarding aspect of this endeavour.

Reliability and validity of results

Respondents in Phase III were from a different FPA to those in Phase I and Phase II. The demographic and playing profiles however, were extremely similar (see p 61 and p 108). Low response rates are a threat to the validity of a study. The response rate for the surveys in Phase I and Phase III studies was adequate given the lack of control over the distribution of the questionnaires. Non-response was probably affected by the lack of relevance of the topic to some participants, especially in Phase III where not having pain in the last month was one of the exclusion criteria. It would have been useful if non-responders to Phase III had been followed up to determine the reason for non-response. Importantly, two recent UK studies (Drawer, & Fuller, 2001; Sheppard, Banks, & Ryan, 2002), both using self-report diagnosis, have broadly confirmed the prevalence of OA reported in Phase I.

The questionnaires in Phases I and III comprised mainly psychometrically robust measures which have been used extensively in the area of chronic disease. One exception in Phase III was the lack of a validated and appropriate social comparison measure. Items were generated from the existing literature on social comparison and findings from Phase II. Other studies have similarly constructed their own social comparison measure (Jensen & Karoly, 1992). Further testing of the psychometric properties of the social comparison measure used in this thesis is needed and therefore the results should be viewed with caution. A limitation of the thesis was the limited range of coping variables included. Perhaps the most serious limitation is the correlational design of Phase III, which means that the temporal ordering of the variables remains to be clarified, although it seems logical to assume that pain occurs before coping.

A criticism levelled at qualitative research is that the analysis is subjective and merely reflects the biography and interests of the researcher, thus resulting in a biased account. Some researchers have attempted to suspend their preconceptions of the topic under investigation (e.g. Beck, 1992). It was felt to be extremely difficult to achieve this given the author's professional and personal involvement in the area. Also, the author is experienced in interviewing people with different types of chronic illnesses and particularly people with arthritis. The author also has OA, which developed as result of playing amateur football. Many researchers undertake research that is some way connected to their biography. (Lowes & Prowse, 2001). Given that the participants were aware that the author had developed OA through playing amateur football, thus sharing similar experiences, it followed the data were co-created, or socially constructed, through a productive interaction between the interviewees and interviewer. The respondents' accounts may have reflected their awareness that they were being interviewed by a male who had been made redundant from a skilled engineering occupation because of OA, but who had since become a university researcher. They may have interpreted this change of occupation as an indication of successful coping with adversity and tailored their accounts of living and coping with OA to reflect their own successful adaptation.

One of the central tenets of hegemonic masculinity is that a man should refrain from openly expressing negative emotions, particularly to other men (Lee & Owens, 2002). Men share their emotions less often than women and usually only with their female partners (Rime, Philippot, Boca, & Mesquita, 1992). Therefore, it may have been the case that the interviews failed to capture the respondents' full range of emotions.

Respondents were interviewed shortly after a TV programme which reported on the long-term health issues facing many ex-professional footballers and featured several who were suing their former clubs for compensation for injuries which they believe arose from inadequate and/or negligent treatment. Many of the respondents reported seeing the programme and it could be that their own similar accounts of inadequate treatment may have been prompted, unconsciously or otherwise, by the experiences featured on the TV programme. The assumption that the respondents know and understand their experiences and simply report an accurate, unbiased account is perhaps a naïve one (Savin-Baden, 2000). The accuracy of the respondents' accounts remain unresolved given the length of time which has elapsed since their playing career ended and the absence of any corroborating accounts from other key personnel involved such as managers, coaches and medical staff. Participants' accounts are often devices for justifying their own conduct and values (Savin-Baden, 2000). Multiple meanings exist in any situation and the meanings around treatment and injuries will be different for players and other staff.

Co-participation by interviewers and interviewees enables a deep understanding of the phenomenon under study to emerge and this has the potential to add to the richness of the analysis (Lowes & Prowse, 2001). This process of reflexivity, where the researcher makes explicit their position and personal history as it relates to the topic being researched, enables the reader to understand how the text was interpreted in context (Owens, & Payne, 1999). Further, disclosure of personally relevant information on the part of the interviewer can foster reciprocal, positive feelings of curiosity and respect (Lowes & Prowse, 2001). A shared interest in and knowledge of the research topic, is viewed as ultimately strengthening the validity of the research findings (Lowes & Prowse, 2001). Finally, personal interest helped maintain commitment when undertaking a part-time PhD.

A reflective view of the research process

At the outset there were concerns over whether it would be feasible to recruit sufficiently large numbers of predominantly working class,ex-professional footballers, lacking in formal educational qualifications to engage in a series of studies focusing on how they felt about their health. It was both an extremely reassuring and rewarding to experience the interest, enthusiasm and gratitude of many of the respondents who embraced the opportunity to reflect upon and inform me of their physical and psychological well-being. This experience has encouraged me to challenge the stereotype of men being uninterested in talking about their health and to ensure that I recruit men into future health psychology studies I undertake.

For the last half century psychology's primary focus has been on mental illness (Seligman, 2003). Given this state of affairs, perhaps not surprisingly, the focus of this thesis was to uncover and report the "burden" of psychosocial distress associated with OA and disability. Because of my redundancy experience I may have imposed my own value judgements about the importance of that event upon the collection and interpretation of the data.

The pathological focus was reflected in the choice of measures and interview questions (e.g. EuroQol, anxiety and depression, pain coping, work disability). However, the results tended to show how positively ex-professional footballers cope and adapt. If I were to conduct similar studies in the future I would widen my focus to include an investigation of positive psychological well-being such as satisfaction with life, optimism and hope. There is a burgeoning interest in positive psychology since it was launched by Seliman's APA Presidential Address in 1998. A recent special edition of *The Psychologist* (2003, Vol 16, 3) was dedicated to furthering the positive psychology debate .

Financial restrictions meant that telephone interviews were the most feasible method of data collection in Phase II. Having now had experience of conducting face-to-face interviews, I am cognizant of how non-verbal cues (e.g. shifting body posture indicating discomfort when talking about pain) can enrich and strengthen data interpretation.

Chamberlain (2001) has commented upon how qualitative research is challenging for those with little or no experience and that interpretation rarely goes beyond classifying the data by frequency of occurrence or broad themes. My own experience of conducting qualitative work while undertaking this thesis concurs with Chamberlain's views. I was fortunate in that my first attempt at analysing the interview data was peer reviewed by an experienced researcher who "challenged" me to do justice to the information I had collected and move beyond "banal categorisations" and instead engage with and interpret the data. Chapter 5 contains my second "improved" attempt.

PART TWO

7.6 IMPLICATIONS OF THESIS

There are several practical implications of this thesis with the results highlighting the possibility of intervening throughout the lifespan of a professional footballer with the aim of improving physical and psychosocial well-being. The results confirm previous and ongoing research which shows the pervasiveness of injuries and the risk factors for these injuries to be multifactorial. Risks identified in this thesis include inadequate treatment and self-imposed pressure to play. Better trained medical staff, as argued for by the respondents in this thesis and by Waddington et al. (2001), should improve both the immediate and long-term well-being of the players. The following quotes, from respondents in Phase II, which exemplify the points made are repeated below.

> "I think that the warning from this study is actually to those in control of players, to have respect for their future. That's where I think the warning goes and that medical teams, coaching people, the managers, the boards of directors give respect to the players and their future well being." (P12)

> "You never thought about arthritis or the effect that it could have on you in years to come ... It may be something that young footballers of today should be warned about what could lie ahead for them." (P11)

Some studies have shown that choice of pain coping strategy remains stable over time. The results from this thesis showed that none of the coping strategies was associated with less pain and psychological distress. This suggests the need for an appropriate intervention aimed at replacing maladaptive and or ineffective coping with adaptive/effective coping. In the UK, pain management interventions aimed at arthritis populations have been successful at improving coping and psychological distress, even in the absence of a reduction in pain. The Arthritis Self Management Programme (ASMP) is set within the framework of self-efficacy theory (Bandura, 1991). The ASMP encourages participants to become active agents, through goal setting and problem solving, in the context of arthritis, perceiving themselves as capable of successfully enacting the self-management strategies that best suit their individual needs in a given situation and at a given time. In the US, evaluations of the ASMP have shown that a greater belief in the ability to manage pain have been associated with less depression and disability (Lorig & Holman, 1993). Also In the US, Keefe, Caldwell, & Williams (1990) found that a pain management intervention, which focused on reversing hopeless cognitions, reduced pain and disability among chronic pain patients. A study of experimentally induced pain have shown that pain control is not linked to the use of any particular pain coping strategy but rather to the avoidance of catastrophising (Chaves & Brown, 1978). The finding that pain coping interventions regularly fail to reduce pain but improve general health–related quality of life, including depression and anxiety, is important in the context of this thesis. In Phase II, respondents described their biggest concern in terms of how pain affected other life domains rather than the presence of pain *per se*. In Phase III, this was confirmed by the finding that the impact of pain on quality of life was an important predictor of psychological distress. Further, pain coping was associated with worse psychological distress, particularly for those with greater pain, probably because coping strategies were ineffective at decreasing pain.

Affleck et al. (1999) found among male and female RA and OA patients, that although women reported far greater daily pain than men, it was the men who reported more negative mood the day following a pain episode. After controlling for pain levels, women tended to use more emotion-focused pain coping strategies, but not problem-focused strategies than men. The authors suggest that the greater use of emotion-focused coping among women explains why women are less distressed than men even when experiencing greater pain. Ptacek, Smith, & Zanus (1992) suggest men are socialised to be emotionally less expressive and find problem-focused coping methods more familiar. The results from this thesis show that it was greater use of emotion-focused coping (i.e. denial, emotional venting and upward comparison) which were predictors of greater psychological distress. One of the explanations for gender differences in pain reporting is that men and women are socialised in different ways. Women learn that it is acceptable to express publicly pain and to seek help. Men on the other hand are expected to ignore pain, minimise its impact and not to seek help. Results from Phase II showed that it is incumbent upon professional footballers to demonstrate hyper-masculine attitudes towards pain and injury. They are expected and encouraged to ignore pain and consider its presence and ability to cope with it and as one of the hallmarks of a good professional. Attendance on a self-management course might provide this group of ex-professional footballers with a different repertoire of coping skills to the ones they are currently using, thus reducing psychological distress and improving health-related quality of life. The results of this thesis suggest that the PFA would serve the long-term health needs of its members well if it provided the opportunity for them to attend a chronic disease/pain self-management course alongside its other welfare initiatives.

PART THREE

7.7 SUGGESTIONS FOR FUTURE RESEARCH

During the course of conversations with ex-professional footballers, a consistent concern was the transition from professional football into retirement. Several ex-players spoke of the difficulties in adapting from an all male environment with its masculine rituals and camaraderie to one where their wife/partner and families became central. The comment from one ex-player in this thesis captured this common sentiment.

> "I feel the greatest effect on anyone stopping playing professional football is the cutting off of social camaraderie. One minute you are in a close social unit, the next, this is cut off from you. Adjusting to this can be very difficult for some people."

A recent newspaper article confirmed that problems with adapting to life outside of professional football is a serious problem for many and not just an isolated few.

> "It may sound odd, but I didn't find it easy spending the afternoon with my wife and children walking in the park. Footballers spend so much time in male company, in an old boys' club that they struggle to deal with everyday life afterwards." (Henderson, 2003).

Although none of the ex-footballers interviewed in a recent UK study had been diagnosed with OA, it was evident that enforced retirement from professional football because of injury resulted in emotional problems which the author described as similar to those experienced in bereavement (Gearing, 1999, p50).

> "Well it's such a big thing really. I mean when I went home and told my wife, it was emotional telling my wife, but I think it is ... when the season starts that's when it starts to hit home and ever since then it has been gradually sinking in more and more .... I've been a bit depressed, but I think I'm coming to terms with it more now. It's just finding something else to do, replacing what you had with something else, although it wouldn't be the same ...... But, no it was just a gradual process really ...." (Gearing, 1999, p.50).

Research from the USA has shown that other adjustment problems for retiring professional athletes include financial problems and lack of clear occupational goals (Messner, 1992). Together these results suggest a possible role for research investigating the factors (e.g. coping) which predict a successful transition. The players could be repeatedly followed up during the period following retirement to determine whether their ability to cope with the transition improves or deteriorates. The COPE could be used to assess coping strategies and the results compared with those reported here to determine whether ex-professional football players cope with retirement issues in the same way that they cope with OA and chronic pain.

Social comparison was a commonly used pain coping strategy and while the Cronbach's alphas of the self constructed scale were adequate, further examination of the psychometric properties (construct and criterion validity) of the is warranted.

With the increasing professionalisation of women's football the type of long-term problems described in this thesis will equally apply to this group. An investigation into the relationships between OA, pain, coping and psychological distress among a sample of ex-professional, female footballers should be considered.

A randomised controlled trial of the ASMP involving ex-professional footballers experiencing OA and/or pain would be useful. The ASMP has the potential to address both the medical (e.g. pain management) and psychosocial (e.g. contact and support from other ex-professional footballers) needs of ex-professional footballers.

Chronic pain and OA are not the only long-term risks of playing professional football. Repeatedly heading the ball has been posited as a factor which can cause a range of cognitive impairments such as attention, memory and concentration deficits (Tysaver & Lochen, 1991). More seriously, a coroner ruled recently that a former England footballer famed for his ability in the air, died from dementia brought on by repeatedly heading the ball. A former Celtic player failed in a legal attempt to prove that his dementia was caused by heading a ball. One of the participants in Phase II retired from professional football because of damage to his eyesight caused by heading a football. Obviously, the effects of heading a ball are more serious, if less prevalent, than chronic pain and OA. Further research should investigate this phenomenon. This suggestion is supported by one of the participants in this study who wrote the following comment on the back of his questionnaire:

> "I applaud your efforts. What a pity you don't do a survey on the amount of players who have died form Alzheimer's disease. The incidence of that disease and players heading a ball is, I think, too common to be incidental."

7.8 OUTCOMES FROM THE THESIS

The thesis has provided a blueprint for other researchers to initiate similar studies throughout the world. A copy of the study protocol and measurement tools has been requested by a research team in Germany. Also the protocol serves as a model for investigating similar issues across a diverse range of athletic populations. Two studies, similar in design to the one undertaken in Phase I of UK ex-professional footballers have recently been published but their focus remains predominantly on the long-term physical sequalae (e.g OA) of playing professional football rather than on psychosocial aspects. Finally, the findings reported in this thesis also add to the growing research in the psychology of men's health.

This thesis has raised awareness of the psychosocial burden of OA and chronic pain among a cohort who have so far been neglected by the academic community and therefore the results have had a practical application, which has rewarded the participants for their commitment and involvement. Listed below is a summary of the main outputs.

Phase I and Phase II studies have been published in the British Journal of Sports Medicine (Turner et al., 2000) and The Journal of Health Psychology - special edition on psychology of men's health, (Turner et al., 2002) respectively. Over 10 conference presentations have been made, with several as an invited speaker. Two conference presentations won prizes for best oral and poster presentation respectively. Phase I attracted an internal grant award from Coventry University. Phase II attracted a fellowship award from the British Medical Association.

Because the thesis has attracted worldwide media attention, this has given the opportunity to many ex-players to voice their concerns to a wide audience. Having spoken to many ex-players I know that they have welcomed the opportunity to take part in what they consider to have been a worthwhile endeavour. Some of the written comments that accompanied the questionnaires illustrate this point.

"I hope you have some convincing results following this research. Good luck."

"Impressed with your concern, I must say the football clubs themselves have not been supportive."

"At the time I played after injury care was minimal and hopefully this report will help players get the correct help for their injuries. I hope my contribution will help you. Thanks"

"I have been resentful and frustrated for many years with regards to the lack of attention my ankle injury received. I have been meaning to write to my ex-club for years but never got round to it. This survey has pushed me into it."

7.9 CHAPTER SUMMARY

Football has been described as a disease of the knee and the results presented here tend to support that view. Injury rates in professional football are in excess of those commonly found in industry (Fuller, 2002). Before this thesis was undertaken little was known about the prevalence and sequale of OA and chronic pain among ex-professional footballers in the UK. This thesis has now begun to address this issue. In some ways a career in professional football fostered a positive attitude which enabled the participants to accommodate to a life of OA and pain, thus minimising their impact on psychological distress. This thesis has shown that most ex-professional footballers perceived pain and disability throughout their career and beyond as a price worth paying for pursuing a rewarding and exciting career.

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APPENDIX 1.0 PHASE I & III QUESTIONNAIRES

PHASE I QUESTIONNAIRE

Long-term effects of playing professional football

Psychosocial Rheumatology Research Centre
School of Health and Social Sciences
Coventry University

This important survey is aiming to find out whether playing professional football has any long-term physical, social and emotional effects. Even if you have not been injured during your career we would still like you to complete the questionnaire as your responses can be compared to those players who have been injured.

The survey covers 5 main areas: career history (playing details), career history (injury record), current physical health status, social & emotional well-being and background information.

There are no right or wrong answers and most questions can be answered by simply placing a **X** in the appropriate box.

If you have any queries concerning this survey please contact:
Andy Turner
Psychosocial Rheumatology Research Centre
The School of Health and Social Sciences
Coventry University
Priory Street
Coventry
CV1 5FB Tel: 01203 838882 Fax: 01203 838784

SECTION A

CAREER HISTORY

1. Please state period as a full-time professional player (e.g. 1962 - 1975)

From .... To................

2. At what standard did you compete at for the majority of your professional career (Please tick one box only)

Premier league/old Div1 ☐
Division 1/old Div2 ☐
Division 2/old Div3 ☐
Division 3/oldDiv4 ☐
Other ☐
(please specify) ....

3. International honours (if applicable) (Please tick all boxes that apply and write in number of appearances)

National (Youth/U19) ☐ No. of appearances ....
National (U21/U23) ☐ No. of appearances ....
National (Senior) ☐ No. of appearances ....

4. Approximately how many games, lasting at least 90 minutes, did you take part in during your professional playing career (please include, pre-season, first-team, reserve, cup, friendly, testimonials, exhibitions and international games)?

Up to 100☐ 101-150☐ 151-200☐ 201-50☐
251-300☐ 301-350☐ 351-400☐ 401-450☐
451-500☐ 501-550☐ 551-600☐ 601-650☐
651-700☐ 701-750☐ 751-800☐ 800 + ☐

5. **What position did you *mainly* play during your professional career (Please tick one box only)**

Goalkeeper ☐
Defender ☐
Midfield ☐
Forward ☐

6. **In your opinion, would you consider yourself to be someone who headed the ball:**

Regularly ☐
Occasionally ☐
Frequently ☐

7. **Were you:**

A right-footed player ☐
A left footed player ☐
Equally proficient with both feet but mainly used ***right*** foot ☐
Equally proficient with both feet but mainly used ***left*** foot ☐

8. **What was the reason for retiring from professional football ?**

Football-related injury (please specify) ☐..
Age ☐
Combination of age & injury (please specify) ☐
Other reason (please specify) ☐..................................

SECTION B

CAREER HISTORY (Injury record)

In the following section, three definitions of injury are used:

MILD INJURY: which required you to miss games for a period of at least 1 week but not exceeding 1 month

MODERATE INJURY: which required you to miss games for a period of at least 1 month but not exceeding 3 months

SEVERE INJURY: which required you to miss games for a period of at least 3 months

1. **If you have never been injured during your professional career please GO TO SECTION C**
   If you have been injured during your professional career please insert the approximate NUMBER (1, 2, etc.) of injuries in the appropriate columns of the injury table below

	Right knee	**Left knee**	**Right hip**	**Left hip**	**Right ankle**	**Left ankle**	**Right foot**	**Left foot**	**Back**	**Neck**	**Other (specify)**
Number of Mild Injuries											
Number of Moderate injuries											
Number of Severe injuries											

2. **During your professional playing career did you ever receive a steroid/cortisone injection?**

Yes ☐

No ☐

IF NO, GO TO Q5

IF YES, how many did you receive and to which injury site? (e.g. 2 to right knee)

....

3. **Were any of these injections were given to enable you to play a game?**

Yes ☐

No ☐

4. Do you feel that you were given sufficient time to recover from an injury before playing again?

Yes ☐

No ☐

<u>IF YES, GO TO Q5</u>

<u>IF NO</u>, who was responsible for the decision to commence playing?(Please tick all that apply)

Team manager ☐

Coach ☐

Club physio ☐

Club doctor ☐

Yourself ☐

Other (please specify) ☐

5. During your career did you have surgery for any professional football-related injuries?

Yes ☐

No ☐

<u>IF NO, GO TO Q6</u>

<u>IF YES</u>, please indicate how <u>MANY TIMES</u> (1, 2 etc.) and to which injury site in the table below

	Right knee	Left knee	Right hip	Left hip	Right ankle	Left ankle	Right foot	Left foot	Back	Neck	Other: Please specify
Number of Surgical operations											

6. Since retiring from the game have you ever had any surgery for professional football-related injuries?

Yes ☐

No ☐

<u>IF NO, GO TO Q7</u>

<u>IF YES</u>, please specify type of surgery & joints affected

....

7. **Since retiring from the game, have you ever had any non-surgical treatments (e.g. physiotherapy, occupational therapy, complementary therapy) for professional football-related injuries?**

Yes ☐

No ☐

<u>IF NO, GO TO SECTION C</u>

<u>IF YES</u>, please specify treatment & joints affected (e.g. acupuncture to left ankle)

....

....

SECTION C

CURRENT HEALTH STATUS

1. **Do you currently take any medication because of injuries sustained while playing professional football?**

Yes ☐

No ☐

<u>IF NO, GO TO Q2</u>

<u>IF YES</u>, please specify which joints are affected and the reason(s) for taking medication

....

....

2.Are you currently awaiting surgery for professional football-related injuries?

Yes ☐

No ☐

<u>IF NO, GO TO Q3</u>

<u>IF YES</u>, please list below the type of surgery awaiting and the joints affected

....

3. Have you been diagnosed as having osteoarthritis (OA)/degenerative arthritis?

Yes ☐

No ☐

<u>IF NO, GO TO Q9</u>

<u>IF YES</u>, please indicate which joints are affected by placing a √ in the appropriate box(es)

Osteoarthritis (OA) table

	Right knee	Left knee	Right hip	Left hip	Right ankle	Left ankle	Right foot	Left foot	Back	Neck	Other: spe
OA √											

7. How old were you when your osteoarthritis was diagnosed?
............years

9. Is your health currently affected by any medical problems?

(please specify)

....

10. Please rate your current state of health by placing a cross (X) on the line below

poor ______________________________________ **perfect**

11. By placing a tick in one box in each group below, please indicate which statements best describe your own health state today.

MOBILITY

I have no problems in walking about ☐

I have some problems in walking about ☐

I am confined to bed ☐

SELF-CARE

I have no problems with self-care ☐

I have some problems washing or dressing myself ☐

I am unable to wash or dress myself ☐

USUAL ACTIVITIES ***(e.g. work, study, housework, family or leisure activities)***

I have no problems with performing my usual activities ☐

I have some problems performing my usual activities ☐

I am unable to perform my usual activities ☐

PAIN/DISCOMFORT

I have no pain or discomfort ☐

I have moderate pain or discomfort ☐

I have extreme pain or discomfort ☐

ANXIETY/DEPRESSION

I am not anxious or depressed ☐

I am moderately anxious or depressed ☐

I am extremely anxious or depressed ☐

13. By placing a cross (X) , please indicate which point on the line below represents the best possible state of health which you might reasonably hope for in the future?

worst possible ______________________________ **best possible**

14. Are you registered disabled? Yes ☐ No ☐

SECTION D

SOCIAL & EMOTIONAL WELL-BEING

1. When you retired from the game do you feel that injuries you sustained playing professional football restricted your employment/career opportunities in any way (e.g. inability to perform physically demanding tasks, loss of income because of absences due to recurrence of injury and/or pain etc.) ?

Yes ☐

No ☐

IF NO, GO TO Q2

IF YES, please give brief details below.

....

....

2. Please rate how satisfied you are with your body image by placing a cross (X) on the line below

complete dissatisfaction **complete satisfaction**

____

BACKGROUND INFORMATION

1. Age now .... **years**

2. Age when retired from professional football .... **years**

Finally, if you have any other comments you wish to make, please express them below (if necessary, continue your comments on a separate sheet of paper).

THE END

* * * * * *

If you would like to receive a summary of the results, please provide you name and address below. Your response, will, of course, be treated in the strictest confidence and your details will not be passed on to any third party.

(PLEASE WRITE IN ***BLOCK CAPITALS***)

Name: ....

Address: ....

PLEASE CHECK THAT YOU HAVE ANSWERED <u>ALL</u> THE QUESTIONS.

<u>THANK YOU VERY MUCH</u> FOR COMPLETING THIS FORM AND FOR HELPING US IN CONDUCTING THIS IMPORTANT PIECE OF RESEARCH

PLEASE RETURN THE COMPLETED FORM IN THE ENVELOPE PROVIDED.

<u>NO STAMP IS REQUIRED.</u>

PHASE III QUESTIONNAIRE

Long-term effects of playing professional football

Interdisciplinary Research Centre in Health
Coventry University

This survey aims to find out how ex-professional players cope with the effects of playing football such as painful joints.

There are no right or wrong answers and most questions can be answered by simply circling the appropriate answer.

The questionnaire only takes about 10 minutes to complete and can be returned in the SAE provided. You do not have to use a stamp. Do not take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought out response.

If you have any queries concerning this survey please contact:
Andy Turner
Interdisciplinary Research Centre In Health
Coventry University
Priory Street
Coventry
CV1 5FB Tel: 024 76 887460 a.turner@coventry.ac.uk

SECTION A: CAREER HISTORY

1. At what standard did you compete at for the majority of your professional career (Please tick one box only)

Premier league/old Div1	☐
Division 1/old Div2	☐
Division 2/old Div3	☐
Division 3/oldDiv4	☐
Other (please specify)	☐ ....

2. International honours (if applicable) (Please tick all boxes that apply and write in number of appearances)

National (Youth/U19)	☐	No. of appearances.............
National (U21/U23)	☐	No. of appearances.............
National (Senior)	☐	No. of appearances ....

3. What position did you *mainly* play during your professional career (Please tick one box only)

Goalkeeper	☐
Defender	☐
Midfield	☐
Forward	☐

4. What was the reason for retiring from professional football ?

Football-related injury (please specify)	☐..
Age	☐
Combination of age & injury	☐
Other reason (please specify)	☐......................................

5. Age when retired from professional football ....years

SECTION B: PAIN SYMPTOMS

1. Have you had knee pain during the last month?☐Yes ☐No

2. Have you had hip pain during the last month?☐Yes ☐No

3. Have you had ankle pain during the last month?☐Yes ☐No

4. Have you had back pain during the last month?☐Yes ☐No

5. During the past month, how would you describe the pain you usually have? Please circle the appropriate number.

Very severe	Severe	Moderate	Mild	Very Mild	None
1	2	3	4	5	6

6. During the past month, how often have you had severe pain? Please circle the appropriate number.

Always	Very often	Fairly often	Sometimes	Almost never	Never
1	2	3	4	5	6

7. During the past month, how long has your morning stiffness usually lasted from the time you wake up? Please circle the appropriate number.

Over 4 hours	2-4 hours	1-2 hours	30 mins – 1 hour	Less than 30 mins	Do not have morning stiffness
1	2	3	4	5	6

8. During the past month, how often have you had pain in two or more joints at the same time?

Always	Very often	Fairly often	Sometimes	Almost never	Never
1	2	3	4	5	6

9. During the past month how often have you had to take medication for your pain?

Always	Very often	Fairly often	Sometimes	Almost never	Never
1	2	3	4	5	6

10. How old were you when your pain symptoms began?
............years

11. Considering all the ways your pain affects you, how would you rate your quality of life?

Excellent	Very good	Good	Fair	Poor
1	2	3	4	5

12. Have you been diagnosed as having osteoarthritis (OA)/degenerative arthritis?

Yes☐ No☐

IF NO, please go to Question 15.

IF YES, please indicate which joints are affected by placing a ✓ in the appropriate box(es)

Osteoarthritis (OA) table

	Right knee	Left knee	Right hip	Left Hip	Right ankle	Left ankle	Right foot	Left foot	Back	Neck	Othe spec
OA ✓											

13. How old were you when your osteoarthritis was diagnosed?
............years

14. Who diagnosed your osteoarthritis?

Club doctor	☐
Club physiotherapist	☐
Club consultant	☐
Other club employee(please specify)	☐ ....
Own doctor	☐
Own consultant	☐
Someone else (please specify)	☐..........................

15. Is your health currently affected by any medical problems other than osteoarthritis?

Yes☐ please specify)
....

No ☐

16. Are you registered disabled? Yes☐ No☐

SECTION C: COPING WITH PAIN

1. This questionnaire asks you to indicate what you generally do and feel when you experience pain. Obviously, different pain episodes bring out different responses, but think about what you **USUALLY** do. **PLEASE CIRCLE THE NUMBER RESPONSE THAT BEST DESCRIBES** your usual response at the time. Please do not leave any item unanswered. Thank you.

When in pain....	I usually don't do this at all	I usually do this a little bit	I usually do this a medium amount	I usually do this a lot
I turn to work or other activities to take my mind off things.	0	1	2	3
I try to get advice or help from other people about what to do.	0	1	2	3
I concentrate my efforts on doing something about the situation I'm in.	0	1	2	3
I express my negative feelings.	0	1	2	3
I say to myself 'this isn't real'.	0	1	2	3
I give up trying to deal with it.	0	1	2	3
I use alcohol or other recreational drugs to make myself feel better.	0	1	2	3
I make jokes about the situation.	0	1	2	3
I get emotional support from others.	0	1	2	3
I take action to try to make the situation better.	0	1	2	3
I refuse to believe that it has happened.	0	1	2	3
I try to see it in a different light, to make it seem more positive.	0	1	2	3
I try to come up with a strategy about what to do.	0	1	2	3
I get comfort and understanding from someone.	0	1	2	3
I give up the attempt to cope.	0	1	2	3
I criticise myself.	0	1	2	3
I say things to let my unpleasant feelings escape.	0	1	2	3
I look for something good in what is happening.	0	1	2	3
I do something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleep or shopping	0	1	2	3
I accept the reality of the fact that it has happened.	0	1	2	3
I get help and advice from other people.	0	1	2	3
I try to find comfort in my religion or spiritual beliefs.	0	1	2	3
I blame myself for things that happened.	0	1	2	3
I make fun of the situation.	0	1	2	3
I use alcohol or other recreational drugs to help me get through it.	0	1	2	3
I learn to live with it.	0	1	2	3
I think hard about what steps to take.	0	1	2	3
I pray or meditate.	0	1	2	3

3. People who experience pain have developed a number of ways to cope. Below are a list of things that people have reported doing when they feel pain. Please indicate below how often you do the same. Remember, you can use any point along the scale. **Please answer all questions**.

WHEN I FEEL PAIN I...	**Never do that**			**Some-times do that**			**Always do that**
Compare myself to someone I know personally who has **worse** pain and/or health problems than me.	1	2	3	4	5	6	7
Compare myself to someone I don't know personally who has **worse** pain and/or health problems than me (e.g. Christopher Reeve).	1	2	3	4	5	6	7
Compare myself to someone I know personally who has **less** pain and/or health problems than me.	1	2	3	4	5	6	7
Compare myself to someone I don't know personally who has **less** pain and/or health problems than me.	1	2	3	4	5	6	7
Think back to a time when I was free from pain and or other health problems .	1	2	3	4	5	6	7

4. Are there any other things that you do to manage your pain that were not mentioned above (e.g. relaxation, exercise, medication, stopping activity?

Please list:

....

5. **Based on all the things you do to cope or deal with your pain, on a average day, how much control do you feel you have over it? Please circle the appropriate number. Remember, you can circle any number along the line.**

No control			**Some control**			**Complete control**
0	1	2	3	4	5	6

6. **Based on all the things you do to cope or deal with your pain, on a average day, how do you feel able to decrease it? Please circle the appropriate number. Remember, you can circle any number along the line.**

Can't decrease it at all			**Can decrease it somewhat**			**Can decrease it completely**
0	1	2	3	4	5	6

SECTION D: IMPACT OF PAIN ON FEELINGS

Please read each item and **TICK** the **BOX** of the reply that comes **closest** to how you have been **feeling in the past week**. Do not take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought out response.

2. I still enjoy the things I used to enjoy

Most of the time ☐
A lot of the time ☐
Time to time, occasionally ☐
Not at all ☐

Definitely as much ☐
Not quite so much ☐
Only a little ☐
Hardly at all ☐

3. I get sort of frightened feeling as if something awful is going to happen

Very definitely and quite badly ☐
Yes, but not too badly ☐
A little, but it doesn't worry me ☐
Not at all ☐

4. I can laugh and see the funny side of things

As much as I always could ☐
Not quite so much now ☐
Definitely not as much now ☐
Not at all ☐

5. Worrying thoughts go through my mind

A great deal of the time ☐
A lot of the time ☐
From time to time but not too often ☐
Only occasionally ☐

6. I feel cheerful

Not at all ☐
Not often ☐
Sometimes ☐
Most of the time ☐

7. I can sit at ease and feel relaxed

Definitely ☐
Usually ☐
Not often ☐
Not at all ☐

8. I feel as if I am slowed down

Nearly all the time ☐
Very often ☐
Sometimes ☐
Not at all ☐

9. I get a sort of frightened feeling like 'butterflies' in my stomach

Not at all ☐
Occasionally ☐
Quite often ☐
Very often ☐

10. I have lost interest in my appearance

Definitely ☐
I don't take much care as I should ☐
I may not take as much care ☐
I take as much care as ever ☐

11. I feel restless as if I have to be on the move

Very much indeed ☐
Quite a lot ☐
Not very much ☐
Not at all ☐

12. I look forward with enjoyment to things

As much as I ever did ☐
Rather less than I used to to ☐
Definitely less than I used to ☐
Hardly at all ☐

13. I get sudden feelings of panic

Very much indeed ☐
Quite often ☐
Not very often ☐
Not at all ☐

14. I can enjoy a good book or radio TV programme

Often ☐
Sometimes ☐
Not often ☐
Very seldom ☐

SECTION E BACKGROUND INFORMATION

1. Age now .... years

2. What is your ethnic origin?

☐ White/European

☐ Black/Afro Caribbean

☐ Asian

☐ Other (please specify)

....

3. What is your current marital status?

☐ Single
☐ Married
☐ Living with partner
☐ Separated
☐ Divorced
☐ Widowed

4. Do you hold any formal educational qualifications? ☐ Yes ☐ No

If YES, at what level?

....

THE END

* * *

PLEASE CHECK THAT YOU HAVE ANSWERED ALL THE QUESTIONS.

THANK YOU VERY MUCH FOR COMPLETING THIS FORM AND FOR HELPING US IN CONDUCTING THIS IMPORTANT PIECE OF RESEARCH.

PLEASE RETURN THE COMPLETED FORM IN THE ENVELOPE PROVIDED.

NO STAMP IS REQUIRED.

APPENDIX 2.0 DISSEMINATION

PEER REVIEW PUBLICATIONS

Turner, AP, Barlow JH & Elliott CH. (2000). The long term health impact of playing professional football in the UK. *British Journal of Sports Medicine, 34,332-337.*

Turner, AP, Barlow JH & Ilbery, B. (2002). Play hurt, live hurt: living with and managing osteoarthritis from the perspective of ex-professional footballers. *Journal of Health Psychology,* 7, 285-301.

(Reprints attached)

REPORTS

Turner, AP & JH Barlow (2001). "Play Hurt, Live Hurt': Living With And Managing Osteoartrhritis From The Perspective Of Ex-professional Footballers. Report submitted to the British Medical Association.

CONFERENCE PRESENTATIONS

AP Turner, JH Barlow & GV Bancroft. (2003). Pain coping strategies are not associated with less psychological distress in ex-professional football players in the UK. Midland Rheumatology Society, Sandwell, October.

AP Turner, JH Barlow & GV Bancroft. (2003). Pain coping strategies in ex-professional football players in the UK. Australasian Society for Behavioural Medicine, Brisbane, February 2003.

AP Turner, JH Barlow & GV Bancroft. (2002) *Eliciting Ex-professional Footballers' Medication Beliefs Could Lead To More Appropriate Prescribing.* International Conference on Communication in Healthcare, Warwick University, September.

AP Turner, JH Barlow & GV Bancroft. (2002) *Men behaving stoically: coping with osteoarthritis from the perspective of ex-professional footballers.* EULAR Stockholm 12-15 June 2002.

AP Turner & JH Barlow. Managing the impact of osteoarthritis among retired professional footballers: An interpretative phenomenological analysis. EULAR Prague,13-16 June 2001

**AP Turner, JH Barlow & MD Barlow. "It's a man thing": living with and managing osteoarthritis from the perspective of ex-professional footballers. British Society of Rheumatology XVIII Annual General Meeting, Edinburgh, 25-27 April, 2001.

**AP Turner. Perceptions and expectations of Osteoarthritis among ex-professional footballers. British Society of Rheumatology XVIII Annual General Meeting, Edinburgh, 25-27 April, 2001.
AP Turner & JH Barlow. Social comparison as a method of coping with osteoarthritis among ex-professional footballers. British Psychological Society, Centenary Annual Conference, Glasgow, 28-31 March, 2001.

**AP Turner. "It's a man thing: living with and managing osteoarthritis from the perspective of ex-professional footballers. Primary Care Sciences Research Centre , Keele University, February 15th, 2001.

**AP Turner, JH Barlow & CH Elliott. *Long-term consequences of playing professional football.* Midlands Rheumatology Conference, Warwick, May 8th, 1998.

AP Turner, J H Barlow, & CC Wright. *Long-term evaluation of the Arthritis Self-Management Programme.* British Society of Rheumatology XV Annual General Meeting, Brighton 22-24, April, 1998.

A P Turner & JH Barlow. *Quality of Life of Former UK Professional Footballers.* Walsgrave Hospitals NHS Trust, Coventry, Postgraduate Medical Centres Conference, 26 January, 2000.

AP Turner & JH Barlow, *Osteoarthritis, health-related quality of life and self-esteem among former professional footballers.* Special Interest Group in Health Psychology, Leeds, 1-3 September, 1999.

** Invited speaker

GRANTS/PRIZES
Joan Dawkins Fellowship (British Medical Association) 1999, *Psychological adjustment to osteoarthritis among former professional footballers.* (£6500)

Coventry University, Research Assessment Strategic Plan (RASP) 1998, *Psychosocial consequences of osteoarthritis among former professional footballers.* (£1500)

Awarded first prize for best poster presentation at International Conference on Communication in Healthcare, Warwick, September 2002, for *Eliciting Ex-professional Footballers' Medication Beliefs Could Lead To More Appropriate Prescribing.*

Awarded first prize for best oral presentation by the Midlands Rheumatology Society for, *Long-term consequences of playing professional football* , Warwick, May 8th, 1998.