A Profile of Injuries and Contributing Factors in Premier League Cricket Players in the Greater Durban Area.

By

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I, Rory Arthur Ludwig Tychsen, do declare that this dissertation is representative of my own work in both conception and execution.

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Dedication

I would like to dedicate this dissertation to my parents, Peter and Colleen Tychsen.

Thank you for your love, support, understanding and unwavering strength.

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Abstract

Objective: Literature has focused its efforts on professional cricket players and player related risk factors to injury with little information being available with regards to coaching / management and environmental risk factors to injury. Therefore, this study aimed to profile the injuries and risk factors in Premier League club cricketers in the greater Durban area.

Methods: This was a prospective, cross-sectional based study, using a self-administered questionnaire, developed specifically for this research utilizing a focus group and pilot study. The questionnaire consisted of a demographics section, as well as an injury history and risk factor section. Letters of informed consent and questionnaire were distributed to 144 players / coaches for completion. Data was analysed using Pearson's correlation and t-tests.

Results: A response rate of 70% (n=109) was achieved. Selected parameters from demographics, injury history and risk factors were found to be significantly related to current and / or previous injury.

Conclusion: It is advised that coaches heed significant injury parameters in order to improve player health, decrease injury risk and decrease time out of play.

Key words: Athletic injuries; questionnaires; cross-sectional study's; risk factors; sports; sports medicine; risk assessment; cricket.

TABLE OF CONTENTS:

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

List of Tables

List of Figues

List of Appendices

APPENDIX N: CD of the focus group proceedings

Definitions of Terms

All-rounder: A cricketer in the team who is able to perform the combined roles of batting and bowling (Woolmer, Noakes and Moffett, 2008).

Batsman: The aim of the batsman is to score as many “Runs” as possible, with a cricket bat, before he is dismissed (Subrayan, 2008).

Batting helmet: Is a helmet with a visor to protect the batsman from being hit on the head by a cricket ball during the bowling delivery (Woolmer, Noakes and Moffett, 2008).

Batting gloves: These are gloves that are padded on the palmer aspect to protect the hands from ball strike (Woolmer, Noakes and Moffett, 2008).

Batting Pads: A padded piece of protective equipment covering the batsman’s legs from knee to ankle (Woolmer, Noakes and Moffett, 2008).

Boundary rope: Encircles the outfield (Woolmer, Noakes and Moffett, 2008).

Bowler: A designated player from the fielding side, who has the task of projecting a cricket ball towards the batsman, with the aim of taking his wicket (Subrayan, 2008).

Catch: This is when the fielder takes and holds onto a batted ball from the air without it touching the ground (Lewis, 1992; Subrayan, 2008).

Cricket: Cricket is a game played between two teams of eleven players each, on a ‘pitch’ with ‘the wicket’ in the middle (Marylebone Cricket Club, 1990).The aim of the bowling side is to get all ten wickets of the batting side, whose aim is to hit as many runs as possible, in the allotted number of overs or days, without losing their wickets (Subrayan, 2008).

Cricket bat: Blade made of willow, flat on one side, humped on the other side for strength, which is attached to a sturdy cane handle (Woolmer, Noakes and Moffett, 2008).

Cricket ball: A hard leather-covered ball (Subrayan, 2008).

Cricket injury: Defined as any injury or other medical condition that either: (a) prevents a player from being fully available for selection for a major match or (b) during a major match, causes a player to be unable to bat, bowl or keep wicket (Orchard, Newman, Stretch, Frost, Mansingh and A Leipus, 2005).

Delivery: Bowler projecting a cricket ball at the batsman, with aim of taking his wicket (Subrayan, 2008).

Face validity: The extent to which a measuring instrument looks as though it is measuring what it purports to measure (Polit and Beck, 2006).

Fast Bowler: Bowler who bowls as fast as possible, with speeds as high as 140km/h or more, usually between 130 to 155km/h (80-95mph) (Woolmer, Noakes and Moffett, 2008).

Fielder: Player in the field who attempts to stop runs from being scored or aims to get batsmen out (Woolmer, Noakes and Moffett, 2008).

Groin box: Abdominal protector worn by batsmen and wicketkeepers to protect there groin area from the ball (Woolmer, Noakes and Moffett, 2008).

Guard: Piece of protective equipment (chest, abdominal, elbow and thigh guard) that the batsman wears to protect his respective body areas from being hit by the cricket ball (Woolmer, Noakes and Moffett, 2008).

Injury incidence: This is an analysis of the number of new injuries occurring over a given time period (Orchard and James, 2002).

Injury prevalence: Considered the average number of *squad members* not available for selection through injury for each match divided by the total number of *squad members*. Injury prevalence was expressed as a *percentage*, representing the percentage of players missing through injury on average for that team for the season in question. It is calculated using the numerator of 'missed player games' as described above (Orchard and james, 2002).

Injury recurrence: A recurrent injury is an injury which had previously caused a player to miss game(s). This is considered a second injury with respect to incidence. Any other injury (e.g. chronic condition) which has multiple exacerbations, but which does not cause missed games in the sequence described above, is defined as a single injury for statistical purposes (Orchard and James, 2002).

Medium Bowler: Bowler who bowls with speeds of between of 100 to 130km/h (60-80 mph) (Woolmer, Noakes and Moffett, 2008).

One day match: Also known as a 'limited overs' match. Each side has one innings, of usually 50 overs, fixed so as to finish in a day (Subrayan, 2008).

Outfield: Refers to the rest of the ground on which the game is played, not including the pitch (Woolmer, Noakes and Moffett, 2008).

Pitch: The 22-yard (20.2-metre) strip with wickets at either end on which the batsmen are stationed (Woolmer, Noakes and Moffett, 2008).

Premier league: the top amateur cricket league in the greater Durban area, South Africa. The league consists of twelve teams (KwaZulu Natal Cricket Union, 2008/2009)

Protective equipment: Pads, gloves and helmet, which are worn by the batsmen and wicket-keepers to wear to prevent injury if they happen to be struck by the ball (Woolmer, Noakes and Moffett, 2008).

Runs: Can be scored in a number of ways: when the batting pair runs between the wickets after a ball has been bowled, a run is scored. If the ball travels outside of the playing area, after having touched the ground prior to leaving the playing area, then four runs are scored. If the ball does not touch the ground on its way out of the playing area, six runs are scored (Marylebone Cricket Club, 1990; Subrayan, 2008).

Slow bowler: A bowler who bowls with speeds of no greater than 100km/h (Woolmer, Noakes and Moffett, 2008).

Spin bowler: A bowler who imparts spin to the ball in order for it to turn one direction once it pitches (Woolmer, Noakes and Moffett, 2008).

Test match: Each side has two innings to bat and bowl. At the end of both teams' innings the side which has scored the most runs in both innings wins. Test matches are played over a period of five days (www.icc-cricket.com, 2009) (Subrayan, 2008).

T20 match: A game with each side having a chance to bat for 20 overs.

Wicket-keeper: Analogues to the catcher in baseball (Woolmer, Noakes and Moffett, 2008).

Wicket / Stumps: Three sticks adjacent to each other in an upright position, at either end of the wicket. The stumps are separated by a gap not greater than the diameter of the ball, on top of which are two smaller sticks, or ‘bails’ (Lewis, 1992; Subrayan, 2008)

Wicketkeeper gloves: These are gloves that are padded, with rubber palms and webbing in between thumb and index finger (Woolmer, Noakes and Moffett, 2008).

Wicket-keeper pads: These are small, compact padding that covers the wicket-keepers legs from knee to ankle (Woolmer, Noakes and Moffett, 2008).

45 over match: Each side has one innings of 45 overs.

60 over match: Each side has one innings of 60 overs.

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Cricket is one of the world's major team sports (Orchard, James and Portus, 2006) and is one of the more popular sports in South Africa. It is a repetitive sport in nature, but it demands high levels of skill, fitness and long hours spent out in the field, which may predispose the cricketer to a wide-range of injuries (Orchard and James, 2002). Keeping these injuries in mind, there should be certain risk factors that would lead to the prevalence of these injuries. In addition, it would be reasonable to conclude that there are certain management protocols that should be followed in order to reduce the prevalence, progression or recurrence of these injuries.

Studies (Dryden, Francescutti, Rowe, Spence and Voaklander, 2000; Bell, Mangione, Hemenway, Amorosa and Jones, 2000; Stratbucker and Green, 2006; Deroche, Stephan, Brewer and Le Scanff, 2007) have shown that these risk factors have been linked to the players' personal characteristics and management factors in various sports (viz. rugby, ice hockey, sport in general, and even female army trainees). These include but are not limited to (Dryden *et al.*, 2000; Bell *et al.*, 2000; Eaton and George, 2005; Stratbucker and Green, 2006; Deroche *et al.*, 2007, Brukner and Khan, 2008):

- Previous injury;
- Overuse;
- Personal characteristics (e.g. tight hamstrings);
- Poor training in female army trainees;
- High individual playing time;
- Age;
- Weight;
- Position;
- Injury history;
- State of the surface being played on;

- Weather conditions;
- Psychological factors;
- Nutritional status;
- Proper coaching and instruction; and
- Proper use of protective gear, including helmets, face masks, and mouth guards.

In an attempt to document injuries and risk factors, Dennis, Farhart, Goumas and Orchard (2003) and Orchard, James, Alcott, Carter, and Farhart (2006) identified fast bowlers as having the greatest risk of injury, with variations in technique, physical characteristics and workload identified as injury risk factors for this population. Further to this, research conducted by Dennis *et al.* (2003) and Dennis, Farhart, Clements and Ledwidge (2004) provided details of the risk factors which led to specific injuries and to specific roles performed (e.g. fast bowlers); Orchard *et al.* (2006), Ranson and Gregory (2007), Stretch and Orchard (2003), and Mansingh (2006). These findings are however limited to professional cricket level only. Limited information is available on the injuries regarding batsmen, fielders and all-rounder's (Belliappa and Barton, 1991; Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Dennis, Farhart, Goumas and Orchard, 2003; Dennis, Farhart, Clements and Ledwidge, 2004; Dennis, 2005; Mansingh, 2006; Orchard, James and Portus, 2006; Mansingh, Harper, Headley, King-Mowatt and Mansingh, 2006; Ranson and Gregory, 2007).

It is however unknown whether these factors play a greater role in the non-professional arena of cricket.

Thus the combined list of all factors may have a direct effect on injury. According to Brukner and Khan (2008), the secret to success in sports medicine is to take a broad view of the patient and his problem if long term goals of injury prevention and treatment are to be realistically met. This was previously stated by Beardmore, Hancock and Rehrer (2000), who stressed the importance of following standardised management protocols in order to reduce the progression or reoccurrence of injuries in French male rugby players. Thus, risk factors such as training errors, surface played on, equipment used, weather conditions, psychological factors, nutritional status, and gender (Brukner and Khan, 2008) should be evaluated in all contexts.

This is particularly true in that injuries vary between individual player to player, team to team, demographic location and socio-economic resources in sports in general (Brukner and Khan, 2008). Given that the majority of the studies regarding the risk factors and management in cricket stem from English (Ranson and Gregory, 2008) and Australian (Orchard, James and Portus, 2006) studies, limited information from South Africa at a national, professional and amateur level is available (Stretch and Orchard, 2003) even though the circumstances are not the same as those related to other contexts.

In addition, the management (or mismanagement) of an injured player, by the coach and / or healthcare professional, is of vital importance as it can either enhance or impinge on the sportsman's (cricketers) health. There is, however, no set standard or quantification of the risk factors or management protocols to sport injuries, highlighted by Beardmore, Hancock and Rehrer (2004) in New Zealand rugby union. With little research conducted on the risk factors and management of injuries in cricket, there has been a failure to identify the risk factors and (mis)management of injuries in positions such as batsmen, fielders, wicket-keepers, and the all-rounder in the cricket team, as well as on the risk factors and management of these injuries to amateur cricket players, particularly in South Africa.

Research into sport injuries of cricket does not quantify injury risk factors and its resultant management. Therefore further research is required to identify the aetiology of injuries at all levels of competition in cricket in order to develop proper risk controls and injury prevention. Especially as risk factor identification and management of injury also seem to vary between individual players, teams, demographic locations and socio-economic resources. Thus, in order for any health professional to optimally contribute to a decrease in the injury of players, it is imperative that he / she identify and understand all the risk factors involved in cricket, and is qualified to manage injuries that present.

According to Braham, Finch, Mcintosh and McCrory (2004) in Australian football, the identification of injuries and their risk factors is required in order to develop risk controls (management) within the context of injury prevention. Thus, in order to determine whether chiropractic (or any other medical personnel) can contribute to reducing risk factors and provide correct management in cricket is based entirely on the understanding of injuries, their prevalence and associated factors.

1.2 Aim of the Study

The first aim was to establish a profile of injuries in premier league cricket players in the greater Durban area.

The second aim was to determine the prevalence of injuries in premier league cricket players in the greater Durban area.

The third aim was to determine the risk factors and management protocols leading to injuries in premier league cricket players in the greater Durban area.

1.3 Research objectives

1.3.1 To determine the prevalence of injuries in cricket players in the greater Durban area.

Hypothesis 1

It could be hypothesized that injuries are not common in cricket in general.

Hypothesis 2

It could be hypothesized that there are no injuries specific to the player's position / role in the cricket team (e.g. type of bowler, batsman, fielder and / or all rounder).

1.3.2 To determine the risk factors leading to cricket injuries in the greater Durban area.

Hypothesis 3

It could be hypothesised that there are no predisposing risk factors linked to cricket injuries.

1.3.3 To determine the management strategies of cricket injuries in the greater Durban area.

Hypothesis 4

It could be hypothesised that are no incorrect or inadequate management strategies that may be linked to the occurrence of cricket injuries.

1.3.4 To determine the existence of any association between prevalence, risk factors and management among cricket players in the greater Durban area.

Hypothesis 5

It could be hypothesized that there are no relationships between the risk factors, their management and the injury rate of the cricket player.

1.4 Rationale for the study

Studies by Stretch and Orchard (2003), Orchard, James and Portus (2006), Ranson and Gregory (2008) and Mansingh (2006) have produced detailed cricket injury lists at a professional level, some going as far back as 10 years (Orchard, James and Portus, 2006); yet none of the articles report on injury rate or prevalence among amateur league players. Thus, there is a paucity of research on the rate or prevalence of injuries in amateur cricketers at a high (premier league) level. This is significant because the professional franchise draws new talent from the pool of amateur leagues, especially the premier league clubs. Assessing the injuries and contributing factors at premier league club level will reduce the transfer of these injuries and risk factors to the professional level, and set up guidelines and procedures for the other amateur and premier league clubs to follow.

In all sports there are certain factors that either promote or prevent injury (Dryden *et al.*, 2000; Deroche, Stephan, Brewer and Le Scanff, 2007). According to Dryden *et al.* (2000) and Beardmore, Handcock and Rehrer (2004), one of these factors is incorrect management protocols. They found in their studies on rugby players that mismanagement decreases player performance and increase risk of injury. These factors have not been assessed in premier league cricketers.

Stretch and Orchard (2003) have compiled a list which indicates cricketing position is more likely to obtain an injury. However, their study lacked an assessment of the risk factors involved. So, by identifying all the risk factors involved with cricket, protocols may be put into place to minimise exposure to risk factors and reduce the incidence and prevalence of injury.

By investigating the injuries and contributing factors, we can identify those risk factors and / or mismanagement factors associated with these injuries. This data could then be used as a guide to determine the best composition of support or management teams with a view to reducing injury. Thus, exploring the possibility of a chiropractor or another health professional playing a role in the reduction or modification of these factors to limit or prevent injury.

1.5 Limitations

As this study is a questionnaire based study, it was assumed that participants to this research answered the study's questionnaire openly and honestly, so allowing the researcher the best estimation of the cricket player's injuries and contributing factors at the premier league club level.

The sample size was that of total sample selection (Mouton, 2002); therefore the final respondent rate determined the total data that could be analysed. Although this study aimed at determining the association between risk factors, their management and the injury rate, the causality of the association (cause and effect relationship) can not be addressed and would be the domain of another study.

This study focussed on premier league cricket players and coaches in the greater Durban area only and not on club cricket players and coaches in Durban or South Africa. There may indeed be some variations in the coaching and training of cricket players and coaches from club to club, province to province and Cricket Union to Cricket Union making the outcomes of this study less generalisable.

1.6 Conclusion

The question is introduced in this chapter and Chapter Two follows with a discussion of the related literature. Chapter Three analyses the methods and materials used to obtain the information required to meet the aims and objectives of the study. The results are then presented and discussed in Chapter Four and Chapter Five presents the recommendations and conclusions to the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Cricket is very popular sport in South Africa and is one of the world's major team sports (Orchard, James and Portus, 2006). It is a repetitive sport in nature and demands high levels of skill, fitness and long hours spent out in the field, which may predispose the cricketer to a wide-range of injuries (Orchard and James, 2002).

The remainder of this Chapter aims to review the literature regarding various cricket injuries and their contributing risk factors in Premier League cricket in the greater Durban area. These studies are discussed under the following headings:

- The aetiology of the injuries,
- Incidence or prevalence of the injuries,
- Injury profile by player position/s or role/s,
- Mechanism of injury,
- Risk factors associated with these injuries,
- Playing surface,
- Preventive equipment,
- Weather and
- Measures and player management pre- and post injury.

2.2 Aetiology of injuries

According to Brukner and Khan (2008) a sports injury may be categorised as either an acute (traumatic or extrinsic) injury or an overuse (intrinsic) injury depending on the mechanism of injury and the onset of symptoms (Woolmer, Noakes and Moffett, 2008).

Extrinsic injuries (acute) arise from an external force, such as an impact from a fast travelling cricket ball (Woolmer, Noakes and Moffett, 2008). However, the external force may not necessarily be from the ball: it may be from another body, the ground or advertising boards (Christie, Todd and King, 2007; Hrysomalis, 2007; Stuelken and Sinclair, 2007; Swan, Otago, Finch and Payne, 2007; Woolmer, Noakes and Moffett, 2008). In this context, acute injuries accounted for 64.8% of cricket injuries (Stretch and Orchard, 2003).

Intrinsic injuries (overuse) arise from internal problems and failures of the body, in other words 'wear-and-tear' injuries, are characterized by a gradual or even slow onset of discomfort or loss or lack of mobility (Woolmer, Noakes and Moffett, 2008). Possible contributing factors may be: biomechanical, genetic weaknesses, insufficient fitness and incorrect sporting techniques, and plain 'overuse' may be a contributing factor among athletes who give an inordinate amount of time to their sport (Stretch, 2001; Dennis *et al.*, 2003; Stretch and Orchard, 2003; Orchard, James and Portus, 2006; Woolmer, Noakes and Moffett, 2008).

2.3 Mechanism of Injury

The primary mechanism of injury was the delivery and follow through of the fast bowler (25.6%), overuse (18.3%), and fielding (21.4%) (Stretch and Orchard, 2003). Furthermore these results indicated that 436 cricketers had accrued 812 injuries revealing that, bowling accounted for 41.3% of total injuries, fielding and wicket-keeping 28.6%, and batting 17.1% (Stretch and Orchard, 2003). This would therefore be congruent with the report that the primary mechanisms of injury were as a result of overuse (30.7%); running to catch or field (15.3%); during the bowling delivery of follow-through (12.3%), and being struck by the ball while batting (11.0%) (Stretch, 2001). Similarly, in the West Indies batsmen and fast bowlers sustained 80% of injuries, with many leading to long absence from the game, although many of these injuries were sustained while fielding (Mansingh *et al.*, 2006), indicating that the bowlers seem to be predisposed to injury irrespective of the activities in which they participate on the field.

In contrast the batsmen suffer a relatively low degree of intrinsic injuries (Woolmer, Noakes and Moffett, 2008), as they are more at risk of extrinsic injuries (e.g. being hit by the cricket ball in the chest, head, groin, toes) (Woolmer, Noakes and Moffett, 2008).

Bowlers, especially the fast bowlers, are susceptible to intrinsic injuries, with the back being affected the most, which may be due to one or more of the following: poor physical characteristics (e.g. overweight), poor physical preparation (e.g. poor endurance), technique faults, and overuse (Woolmer, Noakes and Moffett, 2008).

Injuries sustained by fielders are mostly extrinsic, arising from diving, sliding, rolling, and crashing into advertising boards or other players, and being struck by the ball (Woolmer, Noakes and Moffett, 2008). Fielders are particularly susceptible to one type of intrinsic injury that is related to the technique of throwing the ball, especially from the boundary, which may affect the biceps tendon popping out of the groove in which it runs (Woolmer, Noakes and Moffett, 2008).

With this high rate of injuries, the identification of injuries and their risk factors is required in order to develop risk controls within the context of sports injury prevention (Braham *et al.*, 2004).

2.4 Prevalence and Incidence of Injuries

2.4.1 Prevalence of injuries in cricket

Results from a study carried out by Orchard and James (2002) found that the overall injury prevalence in cricket showed that it was highest in fast bowlers (14.5%). This was followed by batsmen (4.6%), spin bowlers (3.7%), and the wicket-keepers (1.5%). The reason for this was highlighted as a lack of sprinting and long throwing in the field, lack of any bowling and reluctance to miss games for fear of 'losing' their position in the side. Of these, fast bowlers miss, through injury, about 16% of all potential playing time, whereas the prevalence rate for all other positions is less than 5% (Orchard, James and Portus, 2006). In West Indian cricket for the season 2003-2004, the prevalence of cricket injuries was 11.3% in test cricket and 8.1% in one day internationals (Mansingh *et al.*, 2006).

Injuries sustained in first class matches accounted for 27.0%, limited over's 26.9%, and practices 26.8% early on in the season (Stretch and Orchard, 2003).

With respect to the type of injury, soft tissue injuries predominated with 41.0% muscle, 22.2% joint, 13.2% tendon, and 6.2% ligament (Stretch and Orchard, 2003). Injuries most prevalent in bowlers included foot and ankle injuries, knee tendon injuries, lumbar soft-tissue injuries and stress fractures, shoulder tendon injuries and side strains. A study conducted by Orchard and James (2002) revealed that hamstring strains (10%), side strains (9%), groin injuries (7%), wrist and hand injuries (11%), lumbar soft-tissue injuries (7%) and medical illness (8%) were the most frequent injuries.

In terms of the anatomical injury sites, the lower limbs (49.8%), upper limbs (23.3%), and back and trunk (22.8%) were most commonly injured (Stretch and Orchard, 2003). Of these injuries, 57% were first time injuries in players under the age of 24 years, and 58.7% of injuries were from recurrent injuries in the previous season in players over 24 years of age (Stretch and Orchard, 2003; Orchard *et al.*, 2002; Stretch, 1993).

2.4.2 Incidence of injuries in cricket

Orchard and James (2002) reported that the injury incidence in Australian cricket was low compared to other professional sports, which reflects the relative safety of the sport with injury prevalence slightly less than 9%. Over the last four years the average match incidence from a low 22.0 injuries per

10,000 player hours in first class domestic matches to a high of 38.4 injuries per 10000 player hours in one day internationals (Orchard and James, 2002). The average seasonal incidence was 19.3 injuries per squad (of 25 players) per season (of 20 matches) (Orchard and James, 2002).

Mansingh *et al.* (2006) found in West Indian cricket for the season 2003-2004, the mean match injury incidence was 48.7 per 10,000 player-hours in test cricket, and 40.6 per 10,000 player-hours in one day international cricket. In domestic cricket, the match injury incidence was 13.9 per 10,000 player-hours for first class cricket, and 25.4 per 10,000 player-hours in one day domestic competitions (Mansingh *et al*, 2006).

A study from South Africa has shown that injuries are on the rise, with 28.4% to 71.6% of cricketers (Stretch, 1993) sustaining between 1.61 and 1.91 injuries per season (Stretch, 2001).

According to Orchard and James (2002), bowling injuries were far more common than batting or fielding injuries. The trunk / lumbar spine and groin / thigh regions are the most frequently injured body areas in bowlers in particular (Orchard and James, 2002).

2.5 Risk Factors Associated with Injury

According to Orchard and James (2002) the science of injury prevention is in its infancy, and has very few known risk factors and therefore little information is available in the reduction of injuries.

Cricket is a game that has several roles or functions in the team that each member performs, these include: bowling (fast, medium, slow or spin), batting (top-, middle- or low order), fielding (wicketkeeping or specialised positions) or a combination (known as an all-rounder) (Woolmer, Noakes and Moffett, 2008). Therefore, each role has different risk factors predisposing to injury of the cricketer (Orchard and James, 2002; Dennis *et al.*, 2003; Woolmer, Noakes and Moffett, 2008).

Fast bowlers have the highest injury rate and prevalence accounting for 14.5% of all injuries and, therefore, the predisposing risk factors are well documented (Orchard and James, 2002). But, the risk factors for slow or spin bowlers and non-bowling (batting and fielding) are not well documented and therefore, require more research in this area.

Bowlers' injuries are usually due to the immense pressure put on the spine and shoulder (Subrayan, 2008) during the bowling action as well as the forces that are transmitted from the ground up the legs and spine (Stuelken and Sinclair, 2007) and overuse. Fielders' injuries are usually to the shoulder: from the throwing action, where the ball is hurled back at the wicket with speed, or from stopping the ball at speed which may injure eyes, hands and fingers, and other soft tissues, and occasionally collisions with other fielders (Woolmer, Noakes and Moffett, 2008). Batsmen are usually injured due to direct impact of the ball (Woolmer, Noakes and Moffett, 2008).

In general, these risk factors (Section 1.1) have been identified in various sports (viz. rugby, ice hockey, female army trainees) and cricket.

From the above statements it can be seen that research into risk factors so far has focussed on the individual player role(s) within the cricket team and the risk factors associated with these role(s). Research on risk factors in other sports, such as rugby, ice hockey, female army trainees, and sport in general (Bell, Mangione, Hemenway, Amorosa and Jones, 2000; Dryden *et al*., 2000; Orchard and James, 2002; Stratbucker and Green, 2006; Deroche *et al*., 2007), has shown that risk factors are not only limited to the individual role(s) of each member of the team, but also to risk factors that the team, as a whole, may experience.

Each individual risk factor is discussed below, highlighting the significance of each risk factor and their contribution to sports, and specifically cricket injuries.

2.5.1 Player Age

In research conducted by Orchard and James (2002) there was no strong relationship found between player age and injury risk. They concluded that this may be due to speed, as speed may be a risk factor for certain injuries, but bowlers may slow down slightly as they age.

However, Stretch (2003) found that younger players (up to 24 years of age) sustained 57% of the first time injuries, and older players (24 years of age and over) sustained 58.7% recurrence of injuries from the previous season.

According to Woolmer, Noakes and Moffett (2008), physical maturity is important because players grow and develop at different rates, therefore the coach should consider each individual players' maturation and adjust their workload accordingly.

2.5.2 Weight, Height and Body Mass Index (BMI)

According to Saglimbini (2007), height and weight are measures of growth and development and may reflect general fitness (e.g. obesity) and pathology (e.g. eating disorders). Saglimbini (2007) also goes on to say that these measures are valuable in evaluating an athlete's risks for competing at certain levels.

Body mass index, or BMI, is a ratio of weight to height (Prentice, 2006), and is calculated by dividing weight by height squared (weight/height^2). Hence it may be used to evaluate the cricketer's general fitness and risks for competing at premier league club level. Health risks associated with excess body fat tend to be associated with a BMI of more than 25 (Prentice, 2006).

2.5.3 Player Role(s) in the Team

Cricket is a team sport with specific roles that each member needs to perform in order for the team to compete, these include: bowling, which may comprise fast, medium, slow or spin bowling; batting, which is ordered from top-order (1-3), middle-order (4-6) and lower-order (7-11), depending on their skill level; fielding, which includes the wicket-keeper, inner ring fielders, and boundary fielders; and all-rounder's, who are able to bat and bowl (Woolmer, Noakes and Moffett, 2008).

Knowing the roles that each player performs and the injuries most common to these roles is important because, according to Stretch and Orchard (2003), bowling (41.3%), then fielding and wicketkeeping (28.6%), and then batting (17.1%) accounted for most of the injuries. Similar findings were reported by Orchard and James (2002). It should however be noted that there are also players that play in several positions (i.e. all rounder's). However, there is a paucity of information available regarding these players with the exception of particular roles / positions in the team. Therefore one would presume that they have a greater likelihood to injury, however when looking at hockey, it was found that utility players had fewer injuries when compared to the players that stuck with defined roles (Korporaal, 2002). This may be applicable to cricket players with a similar all round ability. This has however not been researched and therefore it is unknown.

2.5.4 <u>Workload</u>

There are differing roles that each player is required to perform in the cricket team, with some performing multiple roles (e.g. all-rounder) and others performing a singular role (e.g. batting or bowling), injury prevalence, incidence and type may differ between the cricketers.

Orchard and James (2002) reported that fast bowlers have the highest rate and prevalence accounting for 14.5% of all injuries, and that the predisposing risk factors are well documented. They also go on to report that the non-bowling, such as batting and fielding, and slow or spin bowling are not well documented (Orchard and James, 2002).

The primary mechanism of injury was as a result of overuse (30.7%); running to catch or field (15.3%); during the bowling delivery of follow-through (12.3%), and being struck by the ball while batting (11.0%) (Stretch, 2001). In a later publication, by Stretch and Orchard (2003), the delivery and follow through of the fast bowler (25.6%), overuse (18.3%), and fielding (21.4%) were the primary mechanism of injury.

Fast bowlers' injuries are usually due to the immense pressure put on the spine during the bowling action as well as the ground reaction forces that are transmitted from the ground up the legs and spine (Stuelken and Sinclair, 2007) and overuse.

Fielders' injuries usually affect the shoulder from the throwing action, hurling the ball back at the wicket with speed, stopping the ball in the outfield, and occasionally collisions with other fielders (Woolmer, Noakes and Moffett, 2008).

Batsmen are usually injured due to direct impact of the ball, or posture problems while batting (Woolmer, Noakes and Moffett, 2008).

2.5.5 Previous Injury History

Orchard and James (2002) found that there is an association between cricket injuries and a past history of that injury. This was found to be the case in female ice hockey players where injury in the previous 12 months appears to be highly associated with re-injury (Dryden *et al.*, 2000).

Stretch (2001) reported that first time injuries accounted for 63.6% of the injuries, recurrent injuries from previous seasons made up 23.4%, and that 8.0% recurred again at a later stage in the season.

Brukner and Khan (2008) report that a past injury, left untreated or inappropriately rehabilitated may have contributed to the current injury.

So, in order to investigate the contributing factors to injuries in cricket players, it is important to investigate previous injury history in order to assess the likelihood of re-injury.

2.5.6 <u>Protective Equipment</u>

Protective equipment has been designed to protect various parts of the body against injury without interfering with sporting activity (Brukner and Khan, 2008). In cricket, it is the batsman who needs the most protection as he needs to deal with balls hurtling at him at speeds of up to 150 km/h.

The batsman's equipment is comprised of a helmet, to protect the batsman's head; a groin box, to protect the batsman's genitals; a chest, elbow and thigh guards, to protect those areas from impact; gloves, to protect the batsman's hands and fingers; and pads, to protect the batsman's legs (Woolmer, Noakes and Moffett, 2008).

Wicket-keepers use pads to protect their legs and gloves to protect their hands and fingers, and in some cases, a helmet and abdominal protector (Woolmer, Noakes and Moffett, 2008). The remaining fielders on the field do not use protective equipment unless they have to stand very close to the batsman in certain instances.

In a study investigating sports injury in children, it was found that proper coaching and instruction as well as proper use of protective gear (e.g. helmets, face masks, and mouth guards) is essential to help prevent injury (Stratbucker, 2006).

2.5.7 <u>Weather</u>

Cricket is an outdoor game played in summer and cannot be played if rain is falling as it makes the ball and pitch slippery, and players may struggle to see the ball (Woolmer, Noakes and Moffett, 2008). Not only rain, but wind, dew, humidity, cloud cover and even tides can affect the game of cricket, by either affecting the pitch, or the ball through the air as it is bowled (Woolmer, Noakes and Moffett, 2008).

Probably the most dangerous enemy, especially in the long run, is the sun, or more precisely ultraviolet A (UVA) and ultraviolet B (UVB) bands of the ultraviolet rays in sunlight (Woolmer, Noakes and Moffett, 2008), as cricketers spend hours playing cricket in the sun (Bartlett, 2006). According to Woolmer, Noakes and Moffett (2008), UVA damages collagen fibres in the skin, causing it to age, and more seriously UVB causes skin cancer, including the lethal melanomas.

According to Mansingh (2006), this increased risk of skin cancer is a major concern as 50% of all Australian males in that country will have at least one site of involvement. Mansingh (2006) goes further to say that it is the responsibility of all in sports medicine to be familiar with populations at risk and preventative measures. In the study conducted by Bartlett (2006) on 164 cricketers, it was reported that 62% reported no diagnosis of skin cancer. Bartlett (2006) also reported that 56% of the 45–55 year old group had the highest incidence of skin cancer in at least one anatomical location. By comparison in the under-35 year old group reported an incidence rate of only 17% (Bartlett, 2006).

2.5.8 <u>Psychological</u>

According to Brukner and Khan (2008), psychological factors (i.e. pressure of impending competition) or concern personal or business issues may impair sporting performance, but increase the risk of injury (Brukner and Khan, 2008). This may be due to a loss of concentration, causing the athlete (i.e. cricketer) less time to react to cues (Brukner and Khan, 2008; Shamus and Shamus, 2001)

Brukner and Khan highlighted that these psychological characteristics may be either beneficial or harmful to the cricketer. Overtraining in athletes can lead to psychological symptoms, such as anxiety, depression, apathy, lack of motivation, irritability, inability to relax, and lack of self-confidence, which results in decreased performance (Shamus and Shamus, 2001).

However, research has found that mental skills may help cricketers to rehabilitate quicker than usual (Brukner and Khan, 2008; Deroche, Stephan, Brewer and Le Scanff, 2007; Shamus and Shamus, 2001). These skills involve cognitive imagery to learn and properly perform the rehabilitation exercises (Brukner and Khan, 2008).

2.5.9 Nutrition

Inadequate nutrition may increase the risk of injury due to its effects on recovery, predispose to the overtraining syndrome, may play a role in the development of musculoskeletal injuries (Brukner and Khan, 2008), as well as increase the time needed for recovery following injury (Shamus and Shamus, 2001).

Iron (Fe) depletion

Depletion of iron stores is a common cause of tiredness, particularly in swimmers and endurance athletes (Brukner and Khan, 2008). Athletes may be susceptible to iron deficiency for a number of reasons, including inadequate iron intake, increased iron loss and inadequate absorption of dietary iron (Brukner and Khan, 2008). Special groups at greater risk of iron deficiency are menstruating females, any athlete who diets and adolescent athletes (Brukner and Khan, 2008).

Athletes with symptoms of lethargy and poor performance, in combination with low ferritin levels and / or increased transferrin receptor levels, should attempt to increase their iron intake (Brukner and Khan, 2008).

Glycogen depletion

Glycogen is the storage form of carbohydrate and a major source of energy for the athlete (Brukner and Khan, 2008). Chronic glycogen depletion is an important cause of fatigue in the athlete (Brukner and Khan, 2008). Over a period of intense training and inadequate glycogen repletion, a state of chronic glycogen depletion will develop (Brukner and Khan, 2008). In this state there is inadequate energy available for intense exercise, resulting in fatigue and impaired performance (Brukner and Khan, 2008). Replenishment of glycogen stores is achieved with a diet high in complex carbohydrates (Brukner and Khan, 2008).

Inadequate protein intake

Another potential cause of persistent tiredness is a lack of protein. Protein is the energy source providing 10% of the energy needs through the conversion of amino acids to glucose (Brukner and Khan, 2008). Adequate protein is essential to prevent muscle breakdown (Shamus and Shamus, 2001; Brukner and Khan, 2008).

Calcium

Calcium is a major component of bone but inadequate dietary intake does not appear to be directly associated with bone injury, such as stress fracture (Brukner and Khan, 2008).

Hydration

Athletes need to drink 8 to 10 8-oz glasses of clear liquids per day, and if out in the sun, this should increase to 16 to 24 glasses per day (Shamus and Shamus, 2001).

Athletes, if not hydrated adequately, can suffer from heat exhaustion (Shamus and Shamus, 2001). Heat exhaustion can be caused by depletion of electrolytes and sodium, so it is important to use replacement fluids that contain sodium and electrolytes (Shamus and Shamus, 2001).

2.5.10 Coaching and Management

According to Woolmer, Noakes and Moffett (2008) the primary role of the coach is to be able to diagnose technical problems, and more importantly, they must be able to correct them. Stratbucker (2006) reported that proper coaching and instruction are essential to help prevent injury to children in sport. He also went on to report that it is the responsibility of the coaches and trainers to treat football players with concussion in the team (Stratbucker, 2006).

Part of the coach's responsibilities is to train the athlete in order to increase his fitness and prevent injury, as an athlete who is not fit is more likely to get injured (Prentice, 2006). The athletic trainer, and in the case of premier league club cricket in Durban, the coach must possess sound understanding of the principles of training and conditioning relative to flexibility, strength, and cardiorespiratory endurance (Prentice, 2006). It is also the coach's responsibility to limit and/or modify the rehabilitation of a player's injury if necessary (Prentice, 2006).

Prentice (2006) states that it is the coach's responsibility for preventing injuries by ensuring that athletes have undergone a preventive injury conditioning programme and that sports equipment (especially protective equipment) is of the highest quality.

A coach should also be aware of what produces injuries in his or her particular sport and what measures must be taken to avoid them, and have a thorough understanding of the skill techniques and environmental factors that may adversely affect the athlete (Prentice, 2006).

Hence, if the coach does not understand the importance of training and rehabilitation to the cricketer's performance, this could lead to injury or re-injury of previous injuries.

Thus, the management (or mismanagement) of an injured player, by the coach and/or healthcare professional, is of vital importance, as it can either prolong or be detrimental, to the sportsman's (cricketers) health.

2.5.11 Rehabilitation

Rehabilitation is required to enable the athlete (i.e. cricketer) to return to sport with the previous level of function, in the shortest period of time possible (Brukner and Khan, 2008).

If rehabilitation is inadequate the athlete (i.e. cricketer) is (Brukner and Khan, 2008):

- Prone to re-injury of the affected site;
- Incapable of performing at pre-injury standard and
- Predisposed to injuring another part of the body.

2.5.12 Facilities

The surface on which sportspeople play is also a major contributor to injury risk because of shoe-surface traction (Brukner and Khan, 2007). Swan, Otago, Finch and Payne (2007) reported that it is critical that safe environments are provided for sport, and that safety is influenced by environmental hazards such as ground hardness, poorly maintained playing fields, surface irregularities and the presence of debris / rubbish. To prevent all possible injuries, it is important to consider playing surface hardness because of its association with overuse injuries such as stress fractures, shin pain and tendinopathy (Brukner and Khan, 2007). Sporting activities can generate extremely high loads that may, or may not, be modulated by the surface (Brukner and Khan, 2007). Brukner and Khan (2007) report that a hard surface (e.g. concrete) generates greater force through the musculoskeletal system than a softer surface (e.g. grass). This is especially important for fast bowler's as they have to absorb large ground reaction forces during each delivery, which may be up to three to six times the bowler's weight (Woolmer, Noakes and Moffett, 2008).

2.6 Prevention of injuries

According to Brukner and Khan (2008) sports injury prevention can be characterised as being ‘primary’, ‘secondary’ or ‘tertiary’.

Primary prevention includes health promotion and injury prevention (Brukner and Khan, 2008). This includes always wearing the right protective equipment, being attentive to the ball, using proper fielding techniques, make sure that the quality of playing surface is up to standard, using correct techniques for bowling, increasing overall fitness, avoiding over-training, taking action on injuries while they are still minor, and to obtain sufficient rest (Woolmer, Noakes and Moffett, 2008). Secondary prevention includes early diagnosis and intervention to limit the development of injury or reduce the risk of re-injury (Brukner and Khan, 2008). Tertiary prevention is the focus on rehabilitation to reduce and/or correct an existing injury (Brukner and Khan, 2008).

Brukner and Khan (2008) established that the secret to success in sports medicine is to take a broad view of the patient and his or her problem if long term goals of injury prevention and treatment are to be realistically met. This is echoed by Beardmore *et al.* (2000), who stressed the importance of following standardised management protocols in order to reduce the progression or reoccurrence of injuries in French male rugby players.

The purpose of this study was not to establish what treatment and rehabilitation methods were received by the cricketer for his injuries, but to establish what management protocols were in place to reduce the risk of injury, and if an injury did occur, which medical practitioner (secondary) the cricketer sought for that injury, and whether or not that medical practitioner was appropriate for that injury.

2.7 Management of injuries

Brukner and Khan (2008) stated that a professional sporting team should have access to the services of a sport physician, physiotherapist, massage therapist, podiatrist, dietician, psychologist, orthopaedic surgeon and sports trainer as well as coaching and fitness staff.

Premier league cricket clubs, being amateur, may not have the resources to employ any of these medical practitioners even on a part-time basis. Still, it is very important for injury prevention and/or treatment, that the coach has the details of medical practitioners readily available to be able to refer his cricketers to when injury necessitates it.

The coach is directly responsible for the athletes training and performance (Brukner and Khan, 2008). Thus, the management (or mismanagement) of an injured player, by the coach and / or healthcare professional, is of vital importance, as it can either prolong or be detrimental, to the cricketers health.

2.8 Research Conducted

2.8.1 Types of injuries in Cricket

Numerous studies (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Mansingh *et al.,* 2006; Orchard, James and Portus, 2006) have been conducted detailing the types, location, incidence and prevalence of cricket injuries.

Stretch and Orchard (2003) reported that the lower limbs (49.8%), upper limbs (23.3%), and back and trunk (22.3%) were the most commonly injured; Mansingh *et al.* (2006) reported that most of the injuries were to the fingers (22%) and the lumber spine (20%); and Orchard and James (2002) found that hamstring strains (10%), side strains (9%), groin injuries (7%), wrist and hand injuries (11%), lumbar soft tissue injuries (7%) and medical illness (8%) were the most frequent injuries.

A study by Stretch (2001) found that of the injuries 62.6% were acute, 14.7% chronic and 22.7% were acute injuries on existing chronic injuries. Stretch and Orchard (2003) found similar results, with acute injuries accounted for 64.8% of the injuries. Stretch (2001) also reported that the majority of the injuries were muscle (37.4%), joint (20.9%) and tendon (15.3%) injuries. Stretch and Orchard (2003) also found that muscle (41.0%), joint (22.2%), tendon (13.2%), and ligament (6.2%) injuries were more frequent.

Stretch (2001) reported that 63.6% were first-time injuries, 23.4% were recurrent injuries from previous seasons, and 8.0% recurred later in the season. In a study published by Orchard, James and Portus (2006) detailing injuries to elite male cricketers in Australia over a 10-year period, there were 886 injuries during that time, and 818 were new and 68 were recurrences.

The primary mechanisms of injury were as a result of overuse (30.7%); running to catch or field (15.3%); during the bowling delivery of follow-through (12.3%), and being struck by the ball while batting (11.0%) (Stretch, 2001).

Orchard and James (2002) found that injury prevalence (the percentage of players missing through injury at any given time) was 14.5% for pace bowlers, 3.7% for spin bowlers, 4.6% for batsmen and 1.5% for wicket-keepers in an Australian context. Stretch (2001) and Stretch and Orchard (2003) found that bowling (40.5% and 41. 3%), fielding and wicket-keeping (25.6% and 28.6%), and batting (21.5% and 17.1%) accounted for most of the injuries sustained in a South African context. This is supported by Mansingh *et al.* (2006), who found that batsmen and fast bowlers sustained 80% of injuries, with many leading to long absence from the game, although many of these injuries were sustained while fielding. Orchard, James and Portus (2006) found that in Australian cricketers over a ten-year period, 462 injuries occurred during major matches, of the match injuries 209 occurred whilst bowling, 96 occurred whilst batting, 106 occurred whilst fielding, 8 occurred whilst wicketkeeping with the remainder (43) either occurring gradually or in an unknown activity. Orchard, James and Portus (2006) reported that injuries to fast bowlers remain the priority area for prevention efforts and research, due to the high injury prevalence in this sub-group of cricketers.

Injury incidence has been reported to be 48.7% per 10 000 player-hours in Test cricket, and 40.6% per 10 000 player-hours in one day international cricket, with injury prevalence of 11.3% and 8.1% respectively, in West Indian cricket (Mansingh *et al.*, 2006).

2.8.2 Risk factors for Injuries in Cricket

In order to understand the types of injuries sustained in cricket and to put in place systems to prevent them from occurring or re-occurring, it is important to find and understand the risk factors (and management factors) that predispose the cricketer to these injuries. This is supported by Braham *et al.* (2004) who reported that identification of injuries and their risk factors in Australian football is required in order to develop risk controls within the context of sports injury prevention.

According to Saglimbeni (2007) height and weight (e.g. BMI) are measures that indicate growth and development and may reflect general fitness (e.g. obesity) and pathology (e.g. eating disorders). These measures are also valuable in evaluating an athlete's risks for competing at certain levels.

According to Mansingh (2006) increases in both volume and intensity of participation will lead to an increase in injuries, and only with surveillance can patterns and specific injuries be recognised and reduced. With increased public health risks from exposure to noxious stimuli, it is important for all – players, families, technical and medical staff – to be versed in preventative measures.

Dennis (2005) reported that injury surveillance in Australia and internationally has consistently identified fast bowlers who are at a greater risk of injury. Orchard and James (2002); Dennis *et al* (2003); Dennis, Farhart, Clements and Ledwidge (2004) and Orchard, James and Portus (2006) found that there is a bowling workload threshold beyond which the risk of injury increases and maintaining a bowling workload that is too low or infrequent is an equally significant risk factor for injury. It appears from this work, that number of bowling sessions per week, whether they are in training or in a match, is the factor which most correlates with injury risk (Orchard, James and Portus, 2006). Hamstring and shoulder injuries had the greatest correlation between high workload and likelihood of injury (Orchard and James, 2002).

There is an apparent association between many cricket injuries and a history of that injury, including muscle strains, knee injuries, shoulder tendon injuries and groin injuries (Orchard and James, 2002). This is supported by Dryden *et al.* (2000) who found that a previous injury in the last year and a high exposure level in female ice hockey players, were found to be significant risk factors for that injury. It is highly likely that there are associations between bowler mechanics and risk of certain injuries (Orchard and James, 2002), although this is out of the scope of this study.

Achilles (2005) further reported that fast bowlers in cricket, amongst other sports, have high incidence rates of spondylolysis. In general, the presence of the repetitive actions of flexion, extension, rotation, and torsion, either alone or in combination, are often associated with resistance and with these biomechanical movements that show the highest prevalence of spondylolysis (Soler, 2000).

In research conducted by Swan, Otago, Finch and Payne (2007) it was concluded that sport safety is influenced by sports ground environmental hazards such as ground hardness, poorly maintained playing fields, surface irregularities and the presence of debris/rubbish. To reduce injury risk, sports governing bodies need to ensure regular assessment of grounds safety and the removal of identified hazards (Swan, Otago, Fich and Payne, 2007).

Mansingh *et al.* (2006) reported that injuries in West Indian cricket can be reduced by early detection and management of injuries, attention to fielding and catching techniques, and monitoring of young fast bowlers, which is the responsibility of the coaching and medical staff.

2.9 Conclusion

From the above evaluation of the literature it can be seen that there are many factors that influence risk of injury in cricket players. These factors alone or in combination and under varying circumstances have been suggested to either increase or decrease reported injury rates.

In order achieve this, Chapter Three analyses the methods and materials used to obtain the information required to meet the aims and objectives of the study. The results are then presented and discussed in Chapter Four and Chapter Five presents the recommendations and conclusions to the study.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter describes the study design; methodology used; sampling procedures employed; inclusion and exclusion criteria, methods and data analysis.

3.2 Study Design

This research was a cross-sectional survey, which is based on a self-administrated questionnaire (Fink, 1995). Based on the above study design the research was approved by the Faculty of Health Sciences Research and Ethics Committee (Appendix H) indicating that the research protocol satisfied the ethical requirements set out by the Faculty of Health Sciences Research and Ethics Committee, Durban University of Technology as well as the Declaration of Helsinki (Johnson, 2005).

3.3 Methodology

Selection is based on participant response to the request for them to complete the questionnaire.

3.3.1 Sampling procedure

No advertising was used. The participants were recruited via the Durban and District Cricket Union (body controlling clubs offering cricket through the KwaZulu Natal (KZN) Cricket Union) and the manager of amateur cricket in KZN. In order to access these participants, permission was obtained from the Chairman and / or Coach of the Premier League cricket club (Appendices G1 and G2) prior to the participants being contacted within the respective clubs.

3.3.2 <u>Participant Sampling</u>

3.3.2.1 Sample size

The research was aimed at both cricket players and their coach, currently playing or coaching at Premier League club first side level. The number of potential participants was obtained from the KwaZulu-Natal 2008/9 Official Handbook. The sample was thus based on pre-research analysis, indicating a total population size of 12 coaches and 144 players, giving a total of 156 participants. An attempt was made to sample the entire population (12 coaches and 144 players). However this was dependant on the Premier League club chairman and/or coach allowing the research to proceed within their jurisdiction.

A minimum of seventy percent (70%) response rate (Esterhuizen, 2009) was required, giving a minimum of 93 players and eight coaches, and 101 participants in total. The Questionnaires (Appendix H) and a Letter of Information and Consent (Appendix F) of the aim of the study were given to the prospective participants.

3.3.2.2 Allocation

All participants were allocated to one group. There were no subgroup allocations based on any participant demographic characteristics.

3.3.2.3 Method

Selection was based on participant response to the request to complete the questionnaire. The total population consisting of 12 coaches and 144 players was utilised (total population sampling) (Mouton 1996).

3.3.3 Inclusion and Exclusion Criteria

3.3.3.1 Inclusion criteria

- All current premier league club cricket coaches.
- All current premier league club cricket players.
- All participants must be eighteen years or older.
- The participants must have completed their informed consent in writing (Appendix F).

3.3.3.2 Exclusion criteria

- The members of the Focus Group were excluded from the main study to prevent bias from any of the participants in the main study as set out in Morgan (1998(a)), Morgan (1998(b)) and Morgan (1998(c)).
- The members of the Pilot Study group were excluded from the main study to prevent bias from any of the participants in the main study as set out by Morgan (1998(a)), Morgan (1998(b)) and Morgan (1998(c)).

3.4 Procedure

A Letter of Permission was sent to the KZN Cricket Union (Appendix G3) for permission to approach the premier league clubs. The respective chairmen of each Durban premier league cricket club were approached telephonically and/or directly for permission to administer the questionnaire. A Letter of Permission was then delivered to the chairperson and coach (Appendices G1 and G2). Thereafter, an appropriate time to administer the Letters of Information and Informed Consent Form (Appendix F)[a] and questionnaires (Appendix H) was made. Participants were required to read and sign the

[a] The Letter of Information and Consent (Appendix F1) consists of the basic information about the research project in general, about the questionnaire, and section for the participant to sign his consent. Information includes: the title, the purpose of the research, the procedure, and a reassurance of the confidentiality of the information and the anonymity of their responses.

informed consent section of the Letter of Information and Consent (Appendix F) prior to being included in the research. The researcher then administered the forms (Appendices F and H) to the coach(s) and players. The researcher waited for the participants to complete the forms (Appendices F and H) and answered any questions that may have arisen. Two "ballot" boxes were provided, one for the Letter of Information and Consent (Appendix F) and the other for the Questionnaire (Appendix H), so that the participant's anonymity and confidentiality of the responses was ensured.

3.4.1 <u>Outline of the research packs</u>

The *Letter of Information and Consent* (Appendix F) consisted of an introduction that contained the basic information about the study, information about the questionnaire and statement of agreement to participate in the study. Information included: the title of the research; the purpose of the research; procedures; risks and benefits; the time taken to complete the questionnaire; reassurance to participants of their confidentiality of the information and the anonymity of their responses; persons to contact to answer any questions and a statement of agreement to participate in the research study.

Participants were required to sign the *Letter of Information and Consent* (Appendix F).

The participants then completed the *Questionnaire* (Appendix H).

Premier League clubs also received an *email and a letter from the manager of Amateur Cricket for KZN* supporting this research and encouraging support and participation. Club Chairmen and / or Coach(s) also received a Letter of Information (Appendices G1 and G2) outlining the research, similar to the one that participants received, but further outlining their (club Chairmen and Coach) role in the study.

3.5 Measurement Tool

3.5.1 Questionnaire background

A questionnaire was used to gather the relevant data that is needed. The Questionnaire was developed and modified from an existing questionnaire (Sutherland, 2008) (Appendix A2).

3.5.2 Questionnaire development

The questionnaire was broken down into six main sections and each main section had further questions. The main sections and their questions were developed after consulting an existing questionnaire (Sutherland, 2008) and peer reviewed articles (Beardmore *et al.,* 2000; Bell, Mangione, Hemenway, Amarosa and Jones, 2000; Braham, Finch, Mcintosh an McCrory, 2004; Brukner and Khan, 2008; Dennis *et al*., 2003; Dennis, Farhart, Clements and Ledwidge, 2004; Dennis, Farhart, Goumas and Orchard, 2004; Dryden *et al*., 2000; Deroche *et al*., 2007; Eaton and George, 2005; Mansingh, 2006; Orchard, James, Alcott, Carter and Farhart, 2002; Orchard *et al*., 2006; Orchard, James and Portus, 2006; Ranson and Gregory, 2008; Stretch, 1993; Stretch, 2001; Stretch and Orchard, 2003; Stratbucker and Green, 2006).

> *Section one*, requested personal and demographic information on the cricket player in order to establish if there would be any correlation between these variables and the cricket players perception and knowledge of health professionals.
>
> *Section two,* requested the players cricketing history.
>
> *Section three*, requested a listing of all the cricketers injuries, how they occurred, in which form of cricket, severity, the injury's affect on cricket, and period out of playing cricket.

Section four, requested the cricketer's knowledge and perception of health practitioners.

Section five, requested list and rating of the cricketers club facilities and equipment available to him.

Section six, requested the coach to provide his information, training methods and management style in order to assess the level of supervision and coaching available to the cricketer.

3.5.3 <u>Focus group</u>

A Focus Group was set up to adapt the questionnaire (Appendix A3) to South African context and to establish the face and construct validity as well as to ensure that it met the minimum requirements of reliability and validity set out by Mouton (1996) and Bernard (2000).

Before commencing, the participants read and signed the Letter of Information (Appendix E) and Informed Consent / Assent (Appendix D). A Confidentiality Statement (Appendix C) and Code of Conduct Statement (Appendix B) were also signed by all of the participants. The purpose of these forms collectively was to ensure that the participants were informed about the intentions of the researcher, the topic involved and the nature of the study from the outset. They also made the process formal and official by the participant providing a written Informed Consent that they participated willingly and of their own sanction and to abide by a certain Code of Conduct during the discussions. Finally the participants also agreed in writing that the information and material discussed in the Focus group was confidential and not for general public discussion.

The questionnaire (Appendix A3) was given to the participants and they were asked comment on how the questionnaire could be modified to accurately record the relevant information within the study, so to accurately reflect the constructs applicable to Premier League Cricket Club coaches and players in the greater Durban area.

The Focus Group consisted of two Durban club cricket players, one Durban cricket coach, two research students who are doing, or have done a questionnaire based study based study and three Chiropractors, who assisted with determining the face validity of the questionnaire. This group gathered and discussed the questionnaire and the factors that it covered, ruling out any ambiguity. Relevant questions were included while some irrelevant questions were omitted (Appendices J1 and J2).

A CD of the proceedings of the focus group (Appendix N) has been supplied for examination purposes. Although this contravenes the confidentiality of the focus group members, it will be excluded from the final submission of this dissertation.

3.5.4 Pilot Study

Once the questionnaire (Appendix J1) had been produced by the Focus Group and the approval of the department and faculty, it was subjected to pilot evaluation.

1. The Pilot Study involved taking a very small sample from the population (3-5 people) for which the questionnaire was intended to be administered, with the purpose of having these people to evaluate the questionnaire. The purpose of this would be to see how long it took to complete the questionnaire and identify problem areas within the questionnaire.

The Focus Group Questionnaire (Appendix J1) was then further reviewed in a Pilot Study (Appendix J3). The purpose of the Pilot Study, as per Fink and Kosecoff, (1998) and Hicks, (2004), was to ascertain the following information regarding the questionnaire in general and regarding the specific questions relating to the participants:

a. Would there be any questions that were ambiguous and misleading to the participant?
b. Would the questions be appropriate for the participants?
c. Would the information obtained in the survey be consistent?
d. Would the information obtained in the survey be accurate?
e. Would the question yield the correct and necessary information sought by the researcher?
f. Would the researcher be able to use the information collected in the survey correctly?
g. Has the correct amount of time been allocated to the completing of the questionnaire by the participants?
h. Are all instructions clear and easy to understand by the participants?

3.5.5 Final Questionnaire (Appendix H)

The questionnaire consists of 6 sections: (Appendix H – i.e. post pilot study)

1. The players' demographic details and personal data,
2. Their cricket history, role in the team and pre-season training,
3. Their personal injury history,
4. Their personal knowledge and perception of health care providers,
5. Resources available at their club,
6. Coach's history, qualification, training and management of the team.

3.5.6 Measurement Frequency

The questionnaire will be administered once per participant.

3.6 Data Analysis

3.6.1 Statistical package used

The programme, which was used to analyse the data, was the latest version SPSS statistical package. SPSS version 15.0 (SPSS Inc., Chicago, Illinois, USA).

3.6.2 Descriptive analysis

Descriptive statistics involved the use of frequency tables and bar charts in the case of categorical variables.

3.6.3 Analytical statistics

A *p* value of <0.05 was considered as statistically significant. Associations between the demographic variables and prevalence of injury were assessed using Pearson chi-square. Comparisons of the quantitative variable between the injured and uninjured groups were achieved using independent samples t-test. Analysis of the risk factors was computed using Binary logistic regression

3.7 Conclusion

The methods and materials have now been introduced in this chapter in order to meet the aims and objectives of the study.

The results will be presented and discussed in Chapter Four and Chapter Five presents the recommendations and conclusions to the study.

Chapter Four: Results and Discussion

4.1 Introduction

This chapter reveals the results obtained from the statistical analysis of the data collected, with the discussion of those results. Although this is not the norm for a standard dissertation format, this format has been chosen for ease of reference. This has been achieved by compartmentalized sections under the headings of current injuries, previous injuries, review of the objectives, and conclusion.

4.1.1 Outline of the Objectives of the Study

4.1.1.1 The First objective was to determine the prevalence of injuries in cricket players in the greater Durban area, KwaZulu Natal, South Africa with respect to questionnaire responses including injury profile.

4.1.1.2 The Second objective was to determine the risk factors leading to cricket injuries in the greater Durban area.

4.1.1.3 The Third objective was to determine the management strategies of cricket injuries in the greater Durban area.

4.1.1.4 The Fourth objective was to determine the existence of any association between prevalence, risk factors and management among cricket players in the greater Durban area.

4.1.2 <u>Data</u>

4.1.2.1 Primary data

In this study, the primary data was collected using a self-administered, prospective, cross-sectional questionnaire (Fink, 1995).

4.1.2.2 Secondary data

In this study secondary data was collected from the following sources: journal articles, books, through personal communication with relevant people, focus group and pilot study participants.

4.1.3 <u>Abbreviations used in this Chapter</u>

B	-	Beta Coefficient
CI	-	Confidence Interval
df	-	Degrees of Freedom
n	-	Sample Size In this study "n" may vary as not all the participants in the study were injured and therefore the number of injured differs from the total number of participants who completed the questionnaire.
OR	-	Odds Ratio
***p* value**	-	Probability value (if <0.05 then significant)
S.E.	-	Standard Error
Std. dev	-	Standard Deviation
Wald	-	this is the test statistic from the Wald chi square test from which the *p*-value in the logistic regression is generated (Bland, 1996; Swinscow, 1996; Wright, 1997; Campbell and Machin, 1999; Hinton, 2001).

Q - Refers to question, so by default Q1 refers to Question One.

4.1.4 <u>Results</u>

4.1.4.1 Response Rate for this Study

The sample consisted of the entire population of competitive cricketers of the Premier League club cricket in the greater Durban area and registered with KwaZulu Natal Cricket Union which was 144 cricketers and 12 coaches (n=156) (Adams, 2009; KwaZulu Natal Cricket Union, 2008 / 2009). Questionnaires were given to each of the 144 cricketers and 12 coaches via their respective clubs. Of these clubs, one club elected not to participate in this research.

As a result a total of 118 questionnaires were returned, however 10 of the total returned questionnaires had to be excluded from the study as they did not meet the inclusion criteria. This was as a result of some members of the Premier League not meeting the minimum age of 18 years, which is a stipulated requirement according to the inclusion and exclusion criteria (Chapter 3, Section 3.3.3).

Therefore 108 questionnaires (n=108) were used in the statistical analysis, making the response rate 70.13%. This met the requirement of a 70% response rate, set by the Faculty of Health Sciences Research and Ethics Committee (Chapter 3, section 3.3.2.1).

A response rate of 70% was considered appropriate in this study (Esterhuizen, 2009), as it is suggested by Lindström (2007) that a participation rate of 59% may be regarded as generalisable. Similarly Theraldsen, Olsen and Rundmo (2007) indicated that their response rates of 55% in 2001 and 50% in 2003 were considered to be representative of their populations at different moments in time.

It should however be noted that not all the questions in the results reflected 108 responses in that some participant's did not have an injury or in instances where coaches of the club responded, there were questions pertaining to the injury that were not applicable to them. Conversely if the questions did add up to more than 108 it was due to the fact the participant had the option of selecting more than one answer for that given question.

As a result the response rates for different questions varied between 50% and 70.13%, which have been found to be representative percentages of the norm in work by Lindström (2007) and Theraldsen, Olsen and Rundmo (2007). Therefore it is expected that the results of this study are representative of the Premier League cricket fraternity with particular reference to the cricket players.

4.1.4.2 Response rate per club

All the clubs (12) except for one (Chatsworth Sporting) accepted to participate in this study making the total of clubs participating 11. Participant rate from all the clubs were 101 cricketers and eight (8) coaches, giving a total participant rate of 109 (109 / 156 = 69.9%).

The participant (cricketers) rate from each club was:

- Eight cricketers from African Warriors;
- 11 cricketers from Amanzimtoti;
- 11 cricketers from Berea Rovers;
- Eight cricketers from Chatsworth United;
- Six cricketers from Collegians;
- Nine cricketers from Crusaders;
- Eight cricketers from Dawnheights;
- 10 cricketers from Delta;
- 11 cricketers from Pinetown;
- 10 cricketers from Tertiary; and

- Nine cricketers from Topham.

The participant (coaches) rate from each club was one from:

- Berea Rovers;
- Chatsworth United;
- Collegians;
- Crusaders;
- Delta;
- Pinetown;
- Tertiary; and
- Topham.

4.2 <u>Prevalence of injuries</u>

Injuries in this study were described to body regions and not to specific types of injuries. The regions were categorised as follows:

- Foot / Toes;
- Ankle;
- Achilles tendon;
- Leg / Calf;
- Knee;
- Hamstring (back of leg);
- Quadriceps (front of leg);
- Hip / Groin;
- Lower back;
- Upper back;
- Neck;
- Head;
- Shoulder;
- Biceps (front of upper arm);
- Triceps (back of upper arm);
- Elbow;
- Forearm;
- Wrist;
- Hand / Finger; and
- Other (specify).

4.2.1 <u>Prevalence of current injuries</u>

4.2.1.1 Demographics

4.2.1.1.1 **Prevalence and associations of current injury** (Q16.1 of the CSIQ)

Table 4.1: Prevalence of current injuries

Current Injury	Number of current injuries	Prevalence
Ankle	6	5.9%
Elbow	1	1.0%
Foot / Toes	4	4.0%
Hand / finger	3	3.0%
Hip / Groin	3	3.0%
Knee	6	5.9%
Leg / calf	2	2.0%
Lower back	12	11.9%
Quadriceps (front of leg)	2	2.0%
Shoulder	4	4.0%
Other	1	1.0%
Total	44	43.7%

Table 4.1 provides a summary of the current injuries sustained. Injuries to the lower back were most prevalent. This is graphically illustrated in Figure 4.1.

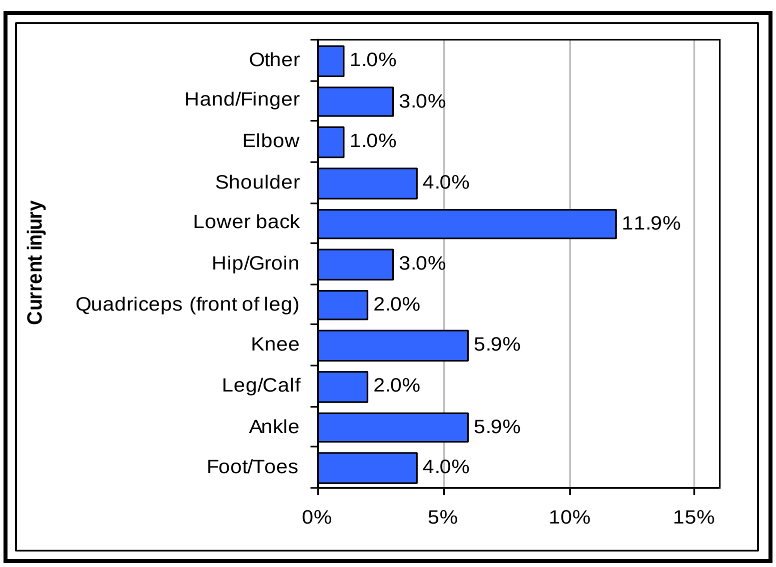


Figure 4.1: Prevalence of current injury

From Table 4.1 and Figure 4.1, it can be seen that lower back injuries accounted for the majority of the injuries sustained by Premier League cricketers at 11.9%, this was followed by the knee and ankle at 5.9% each, shoulder and foot / toes at 4.0% each, hand / finger and hip / groin at 3.0% each, quadriceps and leg / calf at 2.0%, and elbow and other causes at 1.0% each. The lower limb accounted for 22.8%, upper limb 8.0%, and the back 11.9% of the injuries.

Lower back injuries accounted for most of the injuries in this study of Premier League players which is congruent to previous studies who investigated injuries in professional cricketers in Australia, South Africa and the West Indies (Orchard and James, 2002; Orchard, James and Portus, 2006; Stretch 2003; Mansingh *et al.,* 2006). Furthermore, although there was a similarity in trend the magnitude differed in favour of the professionals having a greater degree of injury, which may be as a result of comparing amateur cricketers to professional cricketers. One would however expect that this magnitude of difference would result in a higher rate of injury among amateur cricketers as the professional cricketers had a full-time medical team available (Woolmer, Noakes and Moffett, 2008).

However the following also needs to be considered:

- Amateur cricketers of the Durban Premier League only play T20, 45 and 60 over matches that last for no longer than a day, whereas professional cricketers play T20, 45 or 50 over matches several times a week, and 4 or 5 day matches (Woolmer, Noakes and Moffett, 2008). This implies that the impact of the sports requirements in the professional arena seems to outweigh the effects of supportive medical personnel to counter the effects of injuries.
- Additionally amateur cricketers tend to practice only twice a week and play once a week on the weekend (Woolmer, Noakes and Moffett, 2008), whereas professionals practice daily and play cricket for a living (www.dolphinscricket.co.za, 2009). This further supports the suggested reason in the bullet above.

Therefore, as the intensity and volume with which the two groups play cricket cannot be compared as it was not measured in this study, the effect that this may have on the players' injuries should be considered. It is therefore suggested that these different aspects form part of a future research endeavour.

Past studies reported similar injury prevalence findings for ankle, knee, shoulder, hip / groin, leg / calf, and quadriceps (Orchard and James, 2002; Orchard, James and Portus, 2006), which compares favourably with this study.

Injury prevalence of current injuries differed significantly for the foot / toes, elbow, hand / finger, and 'other' injuries (Orchard and James, 2002; Mansingh, 2006; Orchard, James and Portus, 2006). It could be suggested that these differences are attributed to the fact amateur cricketers are more likely to rotate between positions (i.e. are more likely to be utility players) in the field as opposed to professional cricketers who are more likely to dedicate themselves to specific fielding positions (Woolmer, Noakes and Moffett, 2008).

In addition when looking cumulatively at the injuries reported in this study, it was found that there was an injury prevalence, from highest to lowest, for lower limb, upper limb, and back and trunk injuries, which compares favourably with other studies (Orchard, James and Portus, 2006; Orchard and James, 2002; Stretch, 2003). Again it is noted that the magnitudes of the areas injured differed significantly between this study and reported literature (Orchard and James, 2002; Stretch, 2003; Mansingh et al., 2006). It is thus suggested that the reasons are similar as those presented earlier in this discussion.

In conclusion, it can seen that in terms of current individual injuries, the lower back injuries accounted for the majority of current injuries in Premier League cricketers, and the elbow the least of the injuries. However, the total lower limb injuries accounted for the most injuries and the total back injuries accounted for the least of the current injuries. Overall, the injuries tended to follow the trends of previous studies, but not in terms of the reported magnitudes of these injuries.

4.2.1.1.2 **Age** (Q1 of the CSIQ)

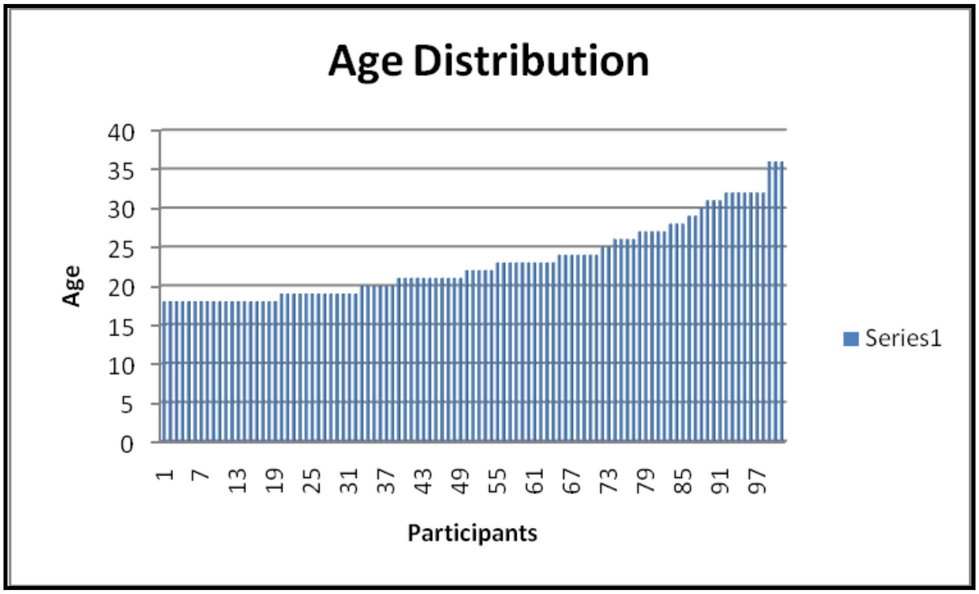


Figure 4.2: Distribution of players by age

Table 4.2: Prevalence of current injuries compared to age

Current Injury	Age group							
	Under 21		21-25		26-and-older		Total	
Ankle	1	1.0%	2	2.0%	3	3.0%	6	5.9%
Elbow	0	0.0%	0	0.0%	1	1.0%	1	1.0%
Foot / Toes	2	2.0%	1	1.0%	1	1.0%	4	4.0%
Hand / finger	2	2.0%	1	1.0%	0	0.0%	3	3.0%
Hip / Groin	1	1.0%	2	2.0%	0	0.0%	3	3.0%
Knee	1	1.0%	3	3.0%	2	2.0%	6	5.9%
Leg / calf	1	1.0%	1	1.0%	0	0.0%	2	2.0%
Lower back	4	4.0%	6	5.9%	2	2.0%	12	11.9%
Quadriceps (front of leg)	2	2.0%	0	0.0%	0	0.0%	2	2.0%
Shoulder	1	1.0%	1	1.0%	2	2.0%	4	4.0%
Other	0	0.0%	1	1.0%	0	0.0%	1	1.0%
Total	15	15.0%	18	17.9%	11	11.0%	44	43.7%

In the analysis of current injuries compared to age, there were no significant findings between the injury and the age of the cricketer.

From Figure 4.2, it can be seen that the participants' ages ranged from 18-36 years, with a mean age of 22.2 years. The majority of the participants were between 18 to 25 years. The majority of the current injuries were sustained by this age group (32.9%), with the 21-25 age group (17.9%) sustaining the majority of the current injuries, followed by the under-21's (15.0%) and the 26-and-older (11.0%).

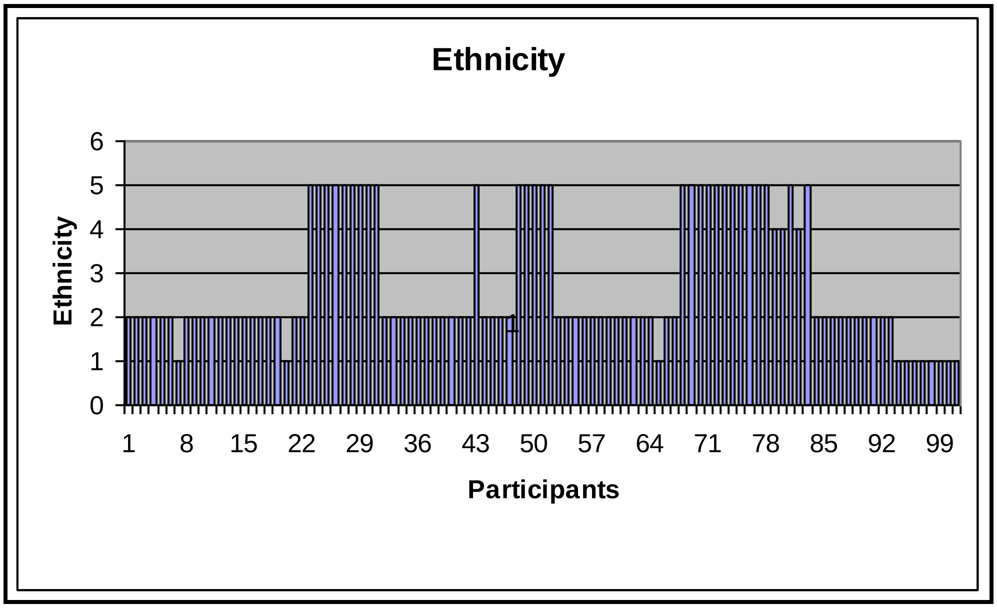
This is similar to Stretch (2003), who found that younger players (up to 24 years of age) sustained 57% of the first time injuries, and older players (over 24 years of age) sustained 58.7% recurrence of injuries from the previous season.

From Table 4.2 and Table 4.3 we find that of the 11.9% lower back injuries, the majority of the back injuries were sustained by the 21-25 age group (5.9%) followed by the under-21 age group (4.0%), and over-26 age group (2.0%). Yet, from Table 4.3 we can see that lower back injuries were not significantly different between the groups. This trend, although insignificant in this study may be supported by the work of Kirkaldy-Willis and Burton (1983). According to their research and Bergmann, Peterson and Lawrence (1993), all individuals pass through a cyclic degeneration process, that consists of three phases; where Phase 1 (Dysfunction) is usually associated with younger individuals and could thus be represented in this study by the under-21's; Phase 2 (Unstable) which represents those individuals that are in a transitionary / dysfunction phase and could be represented in this study by the 21-25 age group in this study; and Phase 3 (Stabilization) represents those individuals that have developed coping mechanisms in face of their previous injuries and their body's adaptation to those injuries which could be represented by the over-26's. This analogy may be possible in that these generic phases could have been altered by the levels of activity of the players, but it is acknowledged that the responses by the body are in all instances the same. This may be supported by the work of Taylor and Resnick (2000), who indicated that skeletal maturity is reached at the age of 25 years, which indicates that those players younger than 25 years are possibly more prone to epiphyseal plate / secondary growth centre anomaly contributions to their injuries. Therefore although possible in terms of an explanation for the outcomes of this study, further research would be required so to validate these findings.

The above is particularly true in that the results of this study are in contrast to the research conducted by Orchard and James (2002) where no strong relationship was found between player age and injury risk. This may also have been due to the fact that Orchard and James (2002) assessed only professional players. But they also indicated that differences to previous research may also be due to speed, and performance demand impact, which is higher in professional cricketers as compared to amateurs. Additionally their survey included only professional players which may have had a closer age range (limited, position specific players) and therefore the findings may have been limited (Orchard and James, 2002), making their results difficult to compare to this study.

To conclude, it would seem that the younger (18 to 25 year) age range sustained the majority of the current injuries, with the over-26's sustaining the least. The 21 to 25 age group suffered the majority of the lower back injuries, with the over-26's sustaining the least.

4.2.1.1.3 **Ethnicity** (Q2 of the CSIQ)



Key: 1 – Black; 2 – White; 3 – Coloured; 4 – Asian; 5 – Indian.

Figure 4.3: Distribution of players by race

Table 4.3: Prevalence of current injuries compared to ethnicity

Current Injury	Ethnicity									
	Black		White		Asian		Indian		Total	
Ankle	1	1.0%	4	4.0%	0	0.0%	1	1.0%	6	5.9%
Elbow	0	0.0%	0	0.0%	0	0.0%	1	1.0%	1	1.0%
Foot / Toes	1	1.0%	2	2.0%	0	0.0%	1	1.0%	4	4.0%
Hand / finger	0	0.0%	3	3.0%	0	0.0%	0	0.0%	3	3.0%
Hip / Groin	0	0.0%	1	1.0%	0	0.0%	2	2.0%	3	3.0%
Knee	1	1.0%	2	2.0%	1	1.0%	2	2.0%	6	5.9%
Leg / calf	0	0.0%	1	1.0%	0	0.0%	1	1.0%	2	2.0%
Lower back	0	0.0%	4	4.0%	0	0.0%	8	7.9%	12	11.9%
Quadriceps (front of leg)	0	0.0%	1	1.0%	0	0.0%	1	1.0%	2	2.0%
Shoulder	0	0.0%	3	3.0%	0	0.0%	1	1.0%	4	4.0%
Other	0	0.0%	1	1.0%	0	0.0%	0	0.0%	1	1.0%
Total	3	3.0%	22	22.0%	1	1.0%	18	17.9%	44	43.7%

Table 4.4: Association between current injuries and ethnic groups (continued)																
Current Injury[1]		Ethnicity												Chi square	df	*P*
		Black		White		Coloured		Asian		Indian		Total				
		Count	%	Count	%	Count	%	Count	%	Count	%	Count	%			
m. Lower back	Yes	0	.0%	4	4.0%	0	.0%	0	.0%	8	7.9%	12	11.9%	10.804	3	.013
	No	11	10.9%	55	54.5%	0	.0%	3	3.0%	20	19.8%	89	88.1%			

The majority of the participants in this study were White players (n=22), followed by Indian players (n=18), Black players (n=3), and Asian players (n=1). No Coloured players involved in this study.

It was noted in the individual comparisons that the injuries sustained by the Black players were to the foot / toes (1.0%), ankle (1.0%), and knee (1.0%); by the White players were to the lower back and ankle (4.0% each), shoulder and hand / finger (3.0% each), foot / toes and knee (2.0% each), and leg / calf, quadriceps, hip / groin and other (1.0% each); by the Indian players were to the lower back (7.9%), knee and hip / groin (2.0% each), and foot / toes, ankle, leg / calf, quadriceps, shoulder and elbow (1.0% each); and by the Asian players were to the knee (1.0%).

Table 4.3 highlighted that Indian players suffered more with lower back problems (7.9%) than the White players (4.0%). White players suffered with the most ankle injuries (4.0%), and shoulder and hand / finger injuries (3.0%). Indian and White players suffered equally with knee injuries (2.0%); the Indian players with hip / groin injuries (2.0%); and the White players with foot / toes injuries (2.0%).

[1] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to ethnicity.

Of all of these injuries (Table 4.3), only lower back injuries (Table 4.4) was statistically significant (p=.013) between the ethnic groups. One possible reason for this is may be that within the Premier League context of this study White players were the most likely to have specific roles and therefore presented with role specific injuries. Further research is needed in this area. However, it would seem from this particular study that Indian players had a greater tendency to lower back pain and therefore role specificity may not be the principle aetiology. Other possibilities that could have induced this significance may be related to training (pre-season and during the season training) (Woolmer, Noakes and Moffett, 2008; King and Gabbett, 2008), type of training (Shaw, Howat, Trainor and Maycock, 2004), facilities (Swan *et* al., 2007; Brukner and Khan, 2008; Woolmer, Noakes and Moffett, 2008), equipment (Stratbucker, 2006; Brukner and Khan, 2008; Woolmer, Noakes and Moffett, 2008), coaching (Stratbucker, 2006; Prentice, 2006; Woolmer, Noakes and Moffett, 2008), cross-training (Brukner and Khan, 2008), and / or the presence of a co-morbid disease (Singh, Naidoo and Harries, 2004).

In conclusion, the ethnic group which sustained the majority of the current injuries were White players, followed closely by the Indian players. The Black players sustained the least. Indian and White players were the most likely to have a lower back injury, and the Black players most likely to sustain foot / toes, ankle and knee injuries. There is a paucity of available research to support this trend, however from researcher experience it is suggested that facilities or equipment may have played a role in determining this injury profile. So, further research is needed to determine the strength of this observation.

4.2.1.1.4 **Height versus weight** (Q3 and Q4 of the CSIQ)

Research by Prentice (2006) and Saglimbini (2007) suggests that height and weight ratios (body mass index) has a bearing on or influences injury rates. However in this study height and weight ratios did not seem to influence injury rates.

4.2.1.1.5 **Medical Aid** (Q6 of the CSIQ)

Table 4.5: Cross tabulation of the association between current injury and the medical aid status

Crosstab

		Current injury				Total	
		No injury		Injury			
		Count	**%**	Count	**%**	Count	**%**
Medical aid	Yes	52	**51.5%**	21	**20.8%**	**73**	**72.3%**
	No	22	**21.8%**	6	**5.9%**	**28**	**27.7%**
Total		**74**	**73.3%**	**27**	**26.7%**	**101**	**100.0%**

Table 4.6: Chi-square tests calculated for Table 4.5

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	.556[b]	1	.456

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.49.

From Table 4.5, it can be seen that 73 (72.3%) of the participants had medical aid, which was dispersed fairly evenly over the age range. From Tables 4.5 and 4.6, it can be seen that medical aid had no statistical significance ($p>0.05$) when it came to current injuries. This means that medical aid was found to have no relevance as a risk factor of current injury. It is therefore not likely that the access to medical care is influenced by a particular condition.

In terms of the literature, no information was accessed addressing the relationship between cricket injuries and the prevalence and incidence of current cricket injuries. It is therefore suggested that this area be investigated in the future as medical aid funds or similar such funds may either enable or prohibit injuries within particular arenas (as found in workman's compensation, where access to medical cover is directly proportional to the severity and length of time to which an injury presents and stays, respectively).

4.2.1.2 Current injuries and risk factors

4.2.1.2.1 **Current injuries sustained per club** (Q5 of the CSIQ)

Table 4.7: Prevalence of current Injuries compared across clubs

Current Injury	African Warriors		Amanzimtoti		Berea Rovers		Chatsworth United		Collegians		Crusaders		Dawnheights		Delta		Pinetown		Tertiary		Topham		Total	
Ankle	0	0.0%	2	2.0%	1	1.0%	0	0.0%	1	1.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%	6	5.9%
Elbow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%	1	1.0%
Foot / Toes	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%	1	1.0%	1	1.0%	4	4.0%
Hand / finger	0	0.0%	1	1.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	3	3.0%
Hip / Groin	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2.0%	3	3.0%
Knee	1	1.0%	0	0.0%	1	1.0%	1	1.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	1	1.0%	0	0.0%	1	1.0%	6	5.9%
Leg / calf	0	0.0%	1	1.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2.0%
Lower back	0	0.0%	1	1.0%	1	1.0%	4	4.0%	0	0.0%	0	0.0%	1	1.0%	1	1.0%	0	0.0%	1	1.0%	3	3.0%	12	11.9%
Other	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%
Quadriceps	0	0.0%	1	1.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2.0%
Shoulder	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%	1	1.0%	1	1.0%	4	4.0%
Total	2	2.0%	6	6.0%	6	6.0%	7	7.0%	2	2.0%	1	1.0%	2	2.0%	1	1.0%	4	4.0%	3	3.0%	10	10.0%	44	43.9%

From Table 4.7, Topham cricket club had a injury prevalence of ten (11.0%) current injuries, followed by Chatsworth United with seven (7.0%) injuries, Amanzimtoti and Berea Rovers with six (6.0%) injuries each, Pinetown with four (4.0%) injuries, Tertiary with three (3.0%) injuries, African Warriors, Collegians and Dawnheights with two (2.0%) injuries each, and Crusaders and Delta with one (1.0%) injury each.

Topham reported three lower back injuries, two hip / groin injuries, and one injury each of the foot / toes, ankle, knee, shoulder and elbow regions. Similarly Chatsworth United reported four lower back injuries, and one injury each to the leg / calf, knee, and quadriceps regions. In contrast Amanzimtoti reported two ankle injuries and one injury each to the leg / calf, quadriceps and hand / finger regions. Similarly to Berea Rovers reported one injury to each of the ankle, knee, hip / groin, lower back, hand / finger regions. Pinetown reported one injury to each the foot / toes, knee, shoulder and hand / finger regions as compared to Tertiary which reported one injury to the foot / toes, lower back and shoulder regions only. The lowest was reported by African Warriors who reported one injury each to the foot / toes and knee regions; Collegians reported one injury each to the ankle and shoulder regions; Dawnheights reported one injury each to the knee and lower back regions; Crusaders reported one injury to the ankle; and Delta reported one injury to the lower back.

From the above, African Warriors seems to reflect the injury profile of the Black players (Section 4.2.1.1.3), therefore supporting the likelihood that the injury presentation for each of the clubs is directly representative of the ethnic composition of each of the clubs. This assertion is supported by the fact that the location of the clubs within their respective suburbs would pre-determine the composition of the members of the clubs (DMA Spatial Development Framework Steering Committee, 1998); and would follow a similar trend as suggested by Bhana, Adams and Carney (n.d.).

In conclusion, Topham cricket club incurred the majority of the current injuries, and Crusaders and Delta cricket clubs incurred the least. Current injuries to the lower back were the most prevalent injuries among the Premier League clubs, followed by the ankle.

The above findings concur with section 4.2.1.1.3, where it was noted that current lower back pain was the most prevalent amongst the Indian players constituting nine of the 20 injuries attributed to clubs that have the highest percentage of Indian players. Furthermore, it concurs with section 4.2.1.1.3 indicating that White players have a greater likelihood to injury as those clubs are representative of predominantly White players account for the majority of injuries outside of lower back pain (19 out of the 22 injuries reported were not the lower back).

4.2.1.2.2 **Current injuries per players' role in the team** (Q10 of the CSIQ)

Table 4.8: Prevalence of current injuries compared across the role of the player

Current Injury	Fast / Medium bowler		Slow / Spin bowler		Top order (1-3) batsman		Middle order (4-6) batsman		Wicket-keeper		Fielder	
Ankle	5	5.0%	1	1.0%	1	1.0%	4	4.0%	0	0.0%	2	2.0%
Elbow	1	1.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%
Foot / Toes	3	3.0%	1	1.0%	2	2.0%	2	2.0%	0	0.0%	2	2.0%
Hand / finger	2	2.0%	1	1.0%	2	2.0%	0	0.0%	0	0.0%	0	0.0%
Hip / Groin	3	3.0%	0	0.0%	0	0.0%	2	2.0%	0	0.0%	0	0.0%
Knee	3	3.0%	0	0.0%	1	1.0%	3	3.0%	2	2.0%	1	1.0%
Leg / calf	1	1.0%	1	1.0%	0	0.0%	2	2.0%	0	0.0%	0	0.0%
Lower back	7	6.9%	4	4.0%	4	4.0%	6	5.9%	1	1.0%	4	4.0%
Other	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Quadriceps	1	1.0%	1	1.0%	0	0.0%	2	2.0%	0	0.0%	2	2.0%
Shoulder	2	2.0%	2	2.0%	2	2.0%	1	1.0%	0	0.0%	1	1.0%
Total	29	28.9%	11	11.0%	13	13.0%	22	21.9%	3	3.0%	12	12.0%

Note: Players had multiple roles

From Table 4.8, it can be seen that with respect to the roles performed in the cricket team, the fast / medium bowlers suffered the most with 29 (28.9%) injuries, followed by the middle order (4-6) batsmen with 22 (21.9%) injuries, top order (1-3) batsmen with 13 (13.0%) injuries, the fielder with 12 (14.0%) injuries, the slow / spin bowler with 11 (13.0%) injuries, and the wicket-keeper with 3 (3.0%) injuries.

Bowling (fast / medium and slow / spin bowlers) accounted for most of the injuries in Premier League cricketers with 40 (41.9%) injuries in total. This follows the same pattern and similar magnitudes as previous studies (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Hoskins and Pollard, 2005; Orchard, Newman, Stretch, Frost, Mansingh and Leipus, 2005; Stuelcken, Ginn and Sinclair, 2007; Stretch, 2007; Stuelcken, Ginn and Sinclair, 2008; Ferdinands, Kersting and Marshall, 2009).

Batsmen (top and middle order) followed second, accounting for 35 (34.9%) of the injuries to Premier League cricketers. Past studies follow the same pattern and similar magnitude of injury profiles even though they are at a professional level (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Stretch, 2007).

Lastly, fielders and wicket-keepers accounted for 15 (17.0%) of the injuries to Premier League cricketers, which followed the same pattern and similar magnitude to past studies (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Stretch, 2007).

This means that cricket injuries as they related to the positions of players on the field (in the Premier League in the greater area of Durban) follows very closely to the international and professional injury trends to bowlers (especially fast bowlers), batsmen and wicket-keepers and fielders reported in past studies (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Mansingh, Harper, Headley, King-Mowatt and Mansingh, 2006).

Table 4.9: Association between current injury and the role of the Fast / Medium Bowler

Fast / Medium Bowler[2]		**Yes**		**No**		**Total**		**Chi square**	**df**	***P***
		Count	%	Count	%	Count	%			
b. ankle	Yes	5	5.0%	1	1.0%	6	5.9%	4.103	1	.043
	No	39	38.6%	56	55.4%	95	94.1%			
j. Hip / Groin	Yes	3	3.0%	0	.0%	3	3.0%	4.005	1	.045
	No	41	40.6%	57	56.4%	98	97.0%			

With respect to the fast / medium bowler injuries (Table 4.8), lower back accounted for seven of the injuries, ankle for five injuries, foot / toes, knee and hip / groin for three injuries each, shoulder and hand / finger for two injuries each, and leg / calf, quadriceps, elbow and other for one injury each. From Table 4.9

[2] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to fast / medium bowler.

above we can see that there is only a significant relationship between the role of the fast / medium bowler and ankle injury (*p*=.043) and hip / groin injury (*p*=.045). Ankle injury, along with foot injury, and hip / groin injury have been reported as the most prevalent injury in fast bowlers (Orchard and James, 2002). This means that ankle and hip / groin injury being statistically significant follows the findings of those studies published in the literature (Orchard and James, 2002). This does not follow the trends suggested by Gregory, Batt and Wallace (2004). This may be due to this study including groin injuries with hip injuries, whereas it is singled out as only groin injuries by Gregory, Batt and Wallace (2004).

Table 4.10: Association between current injury and the role of the Slow / Spin Bowler

Slow / Spin Bowler[3]		**Yes**		**No**		**Total**		**Chi square**	**df**	***P***
		Count	%	Count	%	Count	%			
k. Knee	Yes	0	.0%	6	5.9%	6	5.9%	2.825	1	.093
	No	31	30.7%	64	63.4%	95	94.1%			

In the context of the slow / spin bowler, bowling injuries (Table 4.8) consisted of four lower back injuries, two shoulder injuries, and one injury for each of foot / toes, ankle, leg / calf, quadriceps and hand / finger. From Table 4.10 above we can see that there is a significant relationship between the role of the slow / spin bowler and knee injury (*p*=.093). Orchard and James (2002), in their study, found that knee injuries, followed closely by hand and wrist injuries, were the most prevalent injury in spin bowlers, which means that knee injuries being statistically significant in slow / spin bowlers follows trends of past studies.

An assessment of top order (1-3) batsmen injuries (Table 4.8) consisted of four lower back injuries, two each for the foot / toes, shoulder and hand / finger regions; and one each in the ankle, knee and elbow regions. This is in contrast to the middle order (4-6) batsmen injuries (Table 4.8) which consisted of six lower back injuries, four ankle injuries, and two injuries each within the foot / toes, leg / calf, quadriceps and hip / groin regions and one shoulder injury. The reason for

[3] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to the slow / spin bowler with the exception of the knee, which could have been had the sample size been larger.

the differences between the different batting orders may be that the middle order batsman, unlike the top order batsman, have a secondary role of bowling in the team, so injuries sustained while bowling have now transferred and affected his batting. In the analysis of current injuries compared to the top order (1-3) batsman, there were no significant findings between the injury and the top order (1-3) batsman.

Table 4.11: Association between current injury and the role of the Middle Order (4-6) Batsman

Middle Order (4-6) Batsman[4]		Yes		No		Total		Chi square	df	*P*
		Count	%	Count	%	Count	%			
h. Hand / Finger	Yes	0	.0%	3	3.0%	3	3.0%	3.031	1	.082
	No	50	49.5%	48	47.5%	98	97.0%			

Cumulatively from Table 4.11, middle order (4-6) batsmen, may have had a statistically significant association with hand / finger injury (*p*=.082), if due consideration is given to sample size (an increase thereof). Therefore, it is suggested that this association be given due diligence in further research in order to determine whether sample size influenced this association negatively in this research.

Table 4.12: Association between current injury and the role of the Wicket-keeper

Wicket-keeper[5]		Yes		No		Total		Chi square	df	*P*
		Count	%	Count	%	Count	%			
k. Knee	Yes	2	2.0%	4	4.0%	6	5.9%	4.687	1	.030
	No	7	6.9%	88	87.1%	95	94.1%			

In contrast to the foregoing positions, the wicket-keeping injuries (Table 4.8) consisted of two knee injuries and one lower back injury. This resulted in a significant relationship between the role of the wicket-keeper and knee injury (*p*=.030) (Table 4.12). This significance follows the trend reported by Orchard

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[4] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to the middle order (4-6) batsman, with the exception of the hand / finger, which could have been had the sample size been larger.
[5] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to the wicket-keeper.

and James (2002) in their study, which found that knee injuries were the most prevalent injury in this group.

Table 4.13: Association between current injury and the role of the Fielder										
Fielder[6]		**Yes**		**No**		**Total**		**Chi square**	**df**	***P***
		Count	%	Count	%	Count	%			
o. Quadriceps (front of the leg)	Yes	2	2.0%	0	.0%	2	2.0%	5.320	1	.021
	No	26	25.7%	73	72.3%	99	98.0%			

Fielding injuries (Table 4.8) comprised principally of four lower back as well as two injuries of each of foot / toes, ankle and quadriceps regions and one shoulder injury. It was noted from Table 4.13 that there was a significant relationship between the role of the fielder and quadriceps injury (p=.021). Orchard and James (2002) reported that hand and wrist injuries were the most prevalent injury in this group which was possibly related to the fielders role of catching the ball. This was then followed by quadriceps injuries. Therefore this study concurs with the fact that there is a statistical significance between the position of fielding and quadriceps injury.

When comparing the positions in terms of the injuries, it was found that lower back injuries seem to be equally represented in all playing positions. In this context, lower back injuries represented the majority of the current injuries to bowlers, batsmen, and fielders and wicket-keepers. Ankle sprain was the next most common injury to principally affect the bowlers and batsmen, whereas knee and foot / toes injuries were the second most common injury in fielders and wicket-keeper.

In conclusion, it can be seen that all the bowlers followed by all the batsmen incurred the majority of the current injuries, with the fielders and wicket-keepers incurring the least injuries.

[6] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to the fielder.

4.2.1.2.3 Current Injury descriptors and the location of the injury

The descriptors of current injury were as follows:

- Worst Injury (Q.17 of the CSIQ)
  The cricketers were asked to indicate which injury was their worst, if they had indicated more than one injury.
- Activity of Cricket Injury Occurred (Q18 of the CSIQ)
  Cricketers had to indicate in which activity/role of the game they sustained their injury.
- Form of Cricket Injury Occurred (Q19 of the CSIQ)
  Cricket has more than one form that it is played in, so the cricketers had to indicate whether the injury occurred in a T20, 45 or 60 over match.
- Severity of the Injury (Q20 of the CSIQ)
  Here the cricketers had to indicate whether the injury was mild, moderate or severe.
- Effect the Injury had on Cricket (Q21 of the CSIQ)
  Here the cricketer had to indicate whether the injury had no effect, limited effect or prevented the playing of cricket.
- Time Out of Cricket (Q22 of the CSIQ)
  This was used as a measure of the nature of the injury, whether it was acute, sub-acute or chronic in nature.

The regions that did not report any injuries or were not statistically significant are not represented in tabular format in this section, but can be found in Appendix K1 to K20.

With reference to current injuries of the foot / toes (Appendix K1), all descriptors of current injuries were not statistically significant. However, it is interesting to note that one (1.0%) reported it as their worst injury and two (2.0%) identified that the injury occurred during bowling at T20 matches, whereas one (1.0%) indicated that it had occurred during bowling at each of a 45 and 60 over matches respectively.

Of these, one (1.0%) noted that the pain was mild, and three (3.0%) noted the pain was moderate in severity, with all four (4.0%) stating that they were limited from playing cricket. Two (2.0%) reported that the injuries were acute, and two (2.0%) classified their injuries as sub-acute injuries.

This means in the context of foot / toes injuries, they were not considered to be the worst injury, they occurred during bowling, occurred most likely in a T20 match, were moderate in severity, limited the playing of cricket, and were more likely to be acute or sub-acute in nature.

With regards to foot / toes injuries and bowling, past studies support the finding that foot / toes injury is highly prevalent in bowlers (esp. fast bowlers) (Orchard and James, 2002; Orchard, James and Portus, 2006). When it comes to the nature of the foot / toes injury, past studies report that on a whole, injuries in cricket are acute (Stretch, 2001; Stretch, 2003; Stretch and Orchard, 2003). With regards to foot / toes injuries and form of cricket, severity, and the effect on cricket, there is no literature to support or contradict the findings of this study.

Table 4.14: Association between current Injury descriptors and Ankle injury										
		b. Ankle						**Chi square**	**df**	***p***
		Yes		**No**		**Total**				
		Count	%	Count	%	Count	%			
Severity?	N/A	0	.0%	90	89.1%	90	89.1%			
	Mild	2	2.0%	1	1.0%	3	3.0%	5.084	2	.079
	Moderate	4	4.0%	1	1.0%	5	5.0%			
	Severe	0	.0%	3	3.0%	3	3.0%			

With reference to current injuries of the ankle, all descriptors of current injuries were not statistically significant (Appendix J2), except severity (Table 4.14). However, there were six reported ankle injuries (Table 4.14), five (5.0%) were classified as the worst injury, with four (4.0%) having occurred during bowling and one (1.0%) each during fielding and ‘other’ activities. Three (3.0%) occurred in 60 over matches, two (2.0%) during 45 over matches, and one (1.0%) during a T20 match. Of these injuries two (2.0%) were classified as mild, which was borderline statistically significant (p=.079), and four (4.0%) were moderate in severity. Three (3.0%) were reported to prevent and limit playing cricket each, with three (3.0%) of the injuries being reported as acute, one (1.0%) as sub-acute and one (1.0%) as chronic.

In terms of ankle injuries, it is often assumed that they are most likely to be the worst injury reported, occur while bowling, happen during longer (45 and 60 over matches) versions of the game, moderate in severity, likely to prevent or limit the playing of cricket, and to be acute in nature. With regards to ankle injuries and bowling, past studies support the finding that ankle injury is highly prevalent in bowlers (esp. fast bowlers) (Orchard and James, 2002; Orchard, James and Portus, 2006). When it comes to the nature of the ankle injury, past studies report that on a whole, injuries in cricket are acute (Stretch, 2001; Stretch, 2003; Stretch and Orchard, 2003). With regards to ankle injuries and worst injury reported, the form of cricket, severity, and the effect on cricket, there is no literature to support or contradict the findings of this study.

With reference to current injuries of the leg / calf (Appendix K4), all descriptors of current injuries were not statistically significant. However, only one was reported to be their worst injury. Both reported that they injured their leg / calf in an “other” activity (not classified) in cricket. One of the injuries occurred during a 45 over match, the other is not noted; both were mild in severity and had no effect on their ability to play cricket even though both were recorded as acute injuries.

In regards to leg / calf injuries, although participants reported that the injury did not occur during the activities of cricket, one stated that it occurred during a 45 over match. The leg / calf injuries were reported to be mild in severity, acute in nature, and had no effect on the ability to play cricket.

From the study by Orchard and James (2002), it can be seen that leg / calf injuries occurred to bowlers (esp. fast bowlers), although this is not supported in this study. Studies by Stretch (2001) and Stretch and Orchard (2003), reported that most injuries occurred during the longer forms (45 or 60 over matches) of the game, which may be the case for leg / calf injuries. Studies report that the majority of the injuries were acute in nature, but do not talk about leg / calf injuries (Stretch, 2001; Stretch, 2003; Orchard and James, 2002; Stretch and Orchard, 2003). With regards to activity of cricket, severity, and effect on playing cricket, no information is available.

With reference to current injuries of the knee (Appendix K5), all descriptors of current injuries were not statistically significant. However, two participants noted that their injuries were the worst injury they had experienced. Three were reported to have been associated with fielding, while two were as a result of wicket-keeping and one as a result of batting. In terms of the match types, two occurred during a 45 over match and four during a 60 over match, with none in the T20 matches. With respect to severity, two were mild, two were moderate and two were noted as severe. As a result two respondents indicated that their injury prevented them from playing cricket, two had the ability to play limited amount of cricket and two reported they had had no effect on their ability to play cricket. In this context four were noted as acute injuries, one as a sub-acute injury and the last one as a chronic injury.

There is currently no research which distinguishes knee injuries with respect to activity of cricket, form of cricket, severity, effect on the ability to play cricket and nature of the injury. It should, however, be noted that it has been reported that knee injuries occurred as a result of cross-training during practice (Orchard and James, 2002), and majority of injuries in cricket are acute in nature (Stretch, 2001, Orchard and James, 2002; Stretch, 2003; Stretch and Orchard, 2003).

With reference to current injuries of the quadriceps (Appendix K7), all descriptors of current injuries were not statistically significant. However, both respondents noted that the injury was not the worst injury they had experienced. It was noted that one injury occurred while bowling and the other due to fielding. Both occurred in multiple over matches with one occurring in a 45 over match and the other in a 60 over match. The respondents reported that both injuries were acute in nature, mild in severity and had limited their ability to play.

Quadriceps injury has been reported to be a common injury amongst bowlers, batsmen, and fielders and wicket-keepers, but it should be noted that fast bowlers did experience the majority of quadriceps injury (Orchard and James, 2002). Muscle injuries have been noted to be the most prevalent cricket injury by Stretch (2001) and Stretch and Orchard (2003). In terms of nature of injuries in cricket, the majority have been noted to be acute (Stretch, 2001; Stretch, 2003; Orchard and James, 2002; Stretch and Orchard, 2003). There is no literature with regards to the form of cricket, severity, and effect on playing cricket.

With reference to current injuries of the hip / groin (Appendix K8), all descriptors of current injuries were not statistically significant. However, three participants noted that this was their worst injury, with two having occurred during bowling and one during “other” activity. Two of these injuries occurred in a 60 over match whereas the third was not linked to playing cricket. The participants reported their injury as mild, moderate and severe with all their injuries limiting their cricket playing ability. In this context two were reported as sub-acute injuries and one as a chronic injury.

In terms of the hip / groin injuries, the majority occurred while bowling, in 60 over matches, and was reported to be sub-acute in nature. All were reported to limit the ability to play cricket. The severity ranged from mild to severe.

Orchard and James (2002) found that groin injuries were amongst the most prevalent injuries to cricketers after hamstring and side strain injuries. Orchard and James (2002) also found that the majority of hip / groin injuries occurred to fast bowlers. The research, unfortunately, does not report on the form of cricket, the nature and severity of the injury, and whether or not it affected the ability to play cricket. The recommendation is for the hip / groin injury to be studied further.

With reference to current injuries of the lower back (Appendix K9), all descriptors of current injuries were not statistically significant. However, 12 current lower back injuries were reported. Of these injuries nine were reported as the players' worst injury. In terms of the mechanism of action it was found that nine had occurred during bowling, two during batting and one during fielding. The majority were reported to have occurred during 60 over matches, with only one each reported as a result of a T20 or a 45 over match. In terms of the severity, four were rated as mild, six were moderate and two were severe. Seven acute injuries were identified, with four sub-acute and one was chronic. As a result two injuries had prevented playing cricket, while eight had limited playing ability and two injuries had no effect.

It can be seen from this study that lower back injuries accounted for the majority of injuries to cricketers, with the majority occurring while bowling 60 over matches, which is supported by Orchard and James (2002); Mansingh *et al.*

(2006); Stuelcken, Ginn and Sinclair (2008); and Ferdinands, Kersting and Marshall (2009). This result may indicate the incidence of spondylolysis in fast bowlers (Litao and Munyak, 2005; Ferdinands, Kersting and Marshall, 2009). With regards to severity and nature of the injuries, and what effect they had on the ability to play cricket was not found in previous studies, although it must be stated that the majority of theses injuries were acute in nature (Stretch, 2001; Orchard and James, 2002; Stretch, 2003; Stretch and Orchard, 2003).

Table 4.15: Association between current Injury descriptors and Shoulder injury

		m. Shoulder						**Chi Square**	**df**	***p***
		Yes		**No**		**Total**				
		Count	%	Count	%	Count	%			
Severity?	N/A	0	.0%	94	93.1%	94	93.1%			
	Mild	0	.0%	3	3.0%	3	3.0%	7.000	2	.030
	Moderate	2	2.0%	0	.0%	2	2.0%			
	Severe	2	2.0%	0	.0%	2	2.0%			

With reference to current injuries of the shoulder, all descriptors of current injuries were not statistically significant (Appendix K13), except severity (Table 4.15). However, out of the four reported shoulder injuries only one person noted that it was the worst injury they had experienced. Of all the injuries, three occurred during bowling and one during fielding of a 45 (two participants) or 60 (2 participants) over match. The severity was rated as moderate in two instances (this was statistically significant (*p*=0.30)), and two rated severe. Of these injuries one participant was prevented from playing cricket and the other three were limited from playing cricket, which concurred with the reporting that three injuries were acute and one was a sub-acute.

These findings are supported by previous studies by Orchard and James (2002); and Stuelcken, Ginn and Sinclair (2007) and Ranson and Gregory (2008). There is no literature from past studies that highlights the severity, form of cricket, and effect on playing cricket. Although it is noted that Stuelcken, Ginn and Sinclair (2007) reported that the majority of the cricketers presented to them with mild or moderate shoulder injuries of a chronic nature, it seems that, that the majority of shoulder injuries to cricketers are acute in nature (Stretch, 2001; Orchard and James, 2002; Stretch, 2003; Stretch and Orchard, 2003).

With reference to current injuries of the elbow (Appendix K16), all descriptors of current injuries were not statistically significant. However, the one reported elbow injury was not the worst injury that the respondent had experienced. However it occurred during fielding and during a 60 over match. The injury was described as acute in onset, severe in nature and was reported to prevent the playing of cricket.

According to Orchard and James (2002), elbow injuries have only been reported by bowlers, or fast bowlers. Yet, no study highlighting the severity, nature, effect on playing cricket, or form of cricket, have been described.

With reference to current injuries of the hand / finger (Appendix K19), all descriptors of current injuries were not statistically significant. However, three were reported, but none of them represented the worst injury experienced by a player. Two had occurred during fielding and one during wicket-keeping in the course of either a 45 a 60 over match. The severities were rated as mild, moderate and severe. Although only one player stated it limited his playing of cricket, even though all three were classified as acute.

According to Belliappa and Barton (1991) and Orchard and James (2002) hand / finger injuries have occurred mainly while fielding, in 45 or 60 over matches. No literature seems to exist in terms of the severity, nature and effect on playing cricket, although it should be noted that majority of injuries to cricketers were acute (Stretch, 2001; Orchard and James, 2002; Stretch, 2003; Stretch and Orchard, 2003).

With reference to current injuries of the “other” (Appendix K20), all descriptors of current injuries were not statistically significant. However, one current injury was classified as “other” and was not the worst injury. It occurred during bowling in a T20 over match as was described as severe preventing the playing of cricket.

Orchard and James (2002) found that ‘other’ injuries in their study were mainly due to medical illnesses. They also found that the majority of these “other” injuries were sustained by fast bowlers, followed by batsmen. Based on this research it could be assumed that further research is needed to identify the ‘other’ causes of cricket injuries, although according to Orchard and James (2002) it is more likely that to be of a non-musculoskeletal nature.

4.2.1.2.4 Summary of current injury descriptors and the location of the injury

The current worst injuries have been stated in order of severity: lower back (nine), ankle (five), hip / groin (three), knee (two), and foot / toes (one) and shoulder (one), which follows the trends of past studies (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Mansingh *et al*., 2006). This trend follows the trends reported in sections 4.2.1.1.1 – 4.2.1.1.3 and 4.2.1.2.1 – 4.2.1.2.2; and would seem to suggest that Indian players have the worst injuries with White, Black and Asian players having less severe injuries.

These current injuries were reported as moderate (19), whereas there were only 10 players reporting severe injuries. The majority of the current injuries were reported as acute (28), limiting time out of play for less than three weeks. Only four players indicated chronic injuries restricting play for greater than six weeks.

The injuries that were all acute were the hand / finger injuries (three) and leg / calf (two), quadriceps (two), and elbow (one). The injuries that represented an acute response for the majority of the injuries were lower back (seven), knee (four), ankle (three) and shoulder (three). Lower back (four) also represented the highest number of sub-acute injuries, whereas foot / toes injuries were half acute and half sub-acute. The chronic injuries of the ankle, knee, hip / groin and lower back (one each) were more often reported. These results would seem to suggest that the majority of acute injuries are related to extremity injuries indicating that the White players seem to have a mechanism of injury related to acute trauma in comparison to more sub-acute or chronic injuries which seem to be represented in the Indian player population. It could be inferred that this presentation of injuries may be related to facilities, equipment and / or coaching differences between the clubs indicating that those with inadequate facilities or equipment may have a higher likelihood to sub-acute or chronic injuries as apposed to those with fully equipped clubs. Based on the small numbers of this study, it is suggested that further research be conducted in this area.

The form of cricket which may have led to the majority of current injuries was the 60 over matches (26) followed by the 45 over match (11), and then the T20 matches (five). This followed the trends of past studies which found that the longer the form of cricket (60 over matches) the higher the prevalence of injury (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Mansingh *et al*., 2006). The majority of the current injuries limited the cricketer's ability to play cricket (26), with ten injuries preventing participation and eight having no effect.

Furthermore, it was noted that all current injuries to the foot / toes (four), quadriceps (two) and hip / groin (three) limited the playing of cricket. Similarly it was noted that the majority of lower back (eight) and shoulder (three) current injuries limited the cricketers from playing cricket. All leg / calf (two) and the majority of hand / finger (two) current injuries had no effect on the ability to play cricket. No literature exists highlighting the effect of the type of injury and the time out of play (section 4.2.1.2.3), this research seems to suggest that the presence of injury is least likely to effect those with extremity injuries (White players) as apposed to those with spinal injuries (Indian players with lower back pain).

In conclusion, we can see that lower back injuries represented the worst current injuries reported. The majority of current injuries occurred during 60 over matches, they were moderate in severity and acute in nature, and limited the cricketers' ability to play cricket.

Further research recommendations include the time out of play, type of injury and chronicity of injury, and the relationship of all of these to the equipment, facilities and / or coaching represented in each of the clubs.

4.2.1.3 Management factors involved with current injury

4.2.1.3.1 Practitioners consulted and rated by the cricketers (Q23 and Q24 of the CSIQ)

Table 4.16: Practitioners consulted (Q23)

Practitioners consulted[7]		Current injury				Chi square	df	*p*
		No injury		Injury				
		Count	%	Count	%			
Chiropractor	Yes	15	14.9%	12	11.9%	3.276	1	.070
	No	55	54.5%	19	18.8%			
Homoeopath	Yes	0	.0%	2	2.0%	4.607	1	.032
	No	70	69.3%	29	28.7%			

Of the practitioners consulted for their cricket injuries, 16 visited the Physiotherapist, 12 the Chiropractor, eight the Biokineticist, five the General practitioner, six the Orthopaedic surgeon, four the Massage therapist, and two

[7] Of all the practitioners consulted, the Biokineticist, General practioner, Massage therapist, Neurologist, Orthopaedic surgeon, Physiotherapist and 'other' were not statistically significant, with the exception of the Chiropractor, which could have been had the sample size been larger.

the Homoeopath, which was statistically significant (*p*=.032) (Table 4.16). No player consulted the Neurologist.

Chiropractors were the second most consulted practitioner when it came to cricket injuries. This is important to note because the studies profiling cricket injuries and risk factors relied predominantly on Physiotherapists and General practitioners (Stretch, 2001; Stretch and Orchard, 2003). This is important as the reporting of injuries by players to health care providers other than a Physiotherapist or a General practitioner may have been excluded from previous studies, where Chiropractors may have been omitted as a treatment provider option.

With respect to the practitioners rated, none were statistically significant. However, 16 players “strongly disagreed” to see a Homoeopath for their current injury, followed by the Neurologist (11 responses); ten players “strongly agreed” to see a Physiotherapist, followed by the Biokineticist (seven responses) and Chiropractor (seven responses).

It can be deduced that the Physiotherapist is the number one choice for treating current cricket injuries, followed by the Biokineticist and the Chiropractor. The practitioner least likely to be consulted for a cricket injury is the Homoeopath, followed by the Neurologist.

The reasons for this may be that the injuries that the premier league cricketers sustained were not severe enough (see section 4.2.1.2.3) to warrant a consultation by a Neurologist or Orthopaedic surgeon, and not insignificant enough to consult a massage therapist for a just a massage.

In the case of the Homoeopath, one possible reason for them being the least likely to be consulted for cricket injuries, was that the majority of the Premier League cricketers may not know what a Homoeopath is able to treat, and / or they may perceive a Homoeopath in the same light as a General practitioner. In both these instances the General practitioner / Homoeopath are not necessarily perceived as a sports doctor. This is in contrast to Cloete (2008) and Labuschagne (2009) who found that sports management structures in the form of the National Olympic Committee and National Sports Federations consistently chose professions that had a similarity to general practitioners above any other professions when constituting a medical team.

Also, in the case of Biokineticists, and Chiropractors, there may be a limitation in terms of numbers, as there are a lot more Physiotherapists (The South African Society of Physiotherapy, 2008 / 2009) practicing in South Africa than there are Biokineticists (Naidoo 2008) or Chiropractors (Chiropractic Association of South Africa, 2008 - 2009).

In conclusion, the practitioners who were rated the most popular were the Physiotherapist and Chiropractor, and the least popular were the Homoeopath and Neurologist.

4.2.1.3.2 **First Aid and Medical staff available** (Q39-Q42 of the CSIQ)

4.2.1.3.2.1 **First Aid** (Q39 of the CSIQ)

Table 4.17: Cross tabulation of the association between current injury and First Aid at all matches

Crosstab

		Current injury				Total	
		No injury		Injury			
		Count	%	Count	%	Count	%
Is there first aid provided at all matches?	yes	7	**9.5%**	10	**13.5%**	**17**	**23.0%**
	no	47	**63.5%**	10	**13.5%**	**57**	**77.0%**
Total		**54**	**73.0%**	**20**	**27.0%**	**74**	**100.0%**

Table 4.18: Chi-square tests calculated for Table 4.17

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	11.314[b]	1	.001

a. Computed only for a 2x2 table

b. 1 cell (25.0%) has expected count less than 5. The minimum expected count is 4.59.

From Table 4.17 and 4.18, it can be seen that the association between injury occurrence and the presence of First Aid at matches was significant (p=.001) at the 95% level. This means that a lack of First Aid present at matches was found to be a factor predicting / leading to the development of current injuries in cricketers. No comparison could be made to international studies as none could be found. Therefore, in order to reduce injuries, providing some form of First Aid at matches may reduce the prevalence of current injuries.

4.2.1.3.2.2 **Medical staff** (Q40 of the CSIQ)

Table 4.19: Cross tabulation of the association between current injury and medical staff involved with the team

Crosstab

		Current injury				**Total**	
		No injury		Injury			
		Count	**%**	Count	**%**	Count	**%**
Is there any medical staff involved with the team?	yes	3	**4.1%**	5	**6.8%**	**8**	**10.8%**
	no	51	**68.9%**	15	**20.3%**	**66**	**89.2%**
Total		**54**	**73.0%**	**20**	**27.0%**	**74**	**100.0%**

Table 4.20: Chi-square tests calculated for Table 4.19

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	5.723[b]	1	.017

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.16.

From Tables 4.19 and 4.20, the association between injury occurrence and the lack of appropriately qualified medical staff involved with the team was found to be statistically significant (p=.017) at the 95% level. This is similar to the results obtained in the Table 4.17 and Table 4.18 where the association between injury occurrence and the presence of First Aid at matches was also found to be significant. No comparison could be made to international studies as none could be found. Thus, in order to reduce the prevalence of current injuries, having appropriately qualified medical staff available seems to be a factor in reducing the rate of injury occurrence.

4.2.1.3.3 **Facilities** (Q25 of the CSIQ)

4.2.1.3.3.1 **State of the facilities available** (Q25 of the CSIQ)

Table 4.21: State of the facilities available (Q25)								
Facilities available[8]		**Current injury**				**Chi square**	**df**	***p***
		No injury		**Injury**				
		Count	%	Count	%			
Cricket nets - turf	Very poor	4	7.0%	5	8.8%	11.925	4	.018
	Poor	6	10.5%	0	.0%			
	Average	18	31.6%	3	5.3%			
	Good	4	7.0%	6	10.5%			
	Very good	7	12.3%	4	7.0%			
Pool	Very poor	13	32.5%	8	20.0%	7.804	4	.099
	Poor	1	2.5%	2	5.0%			
	Average	8	20.0%	0	.0%			
	Good	4	10.0%	1	2.5%			
	Very good	3	7.5%	0	.0%			

When assessing the facilities and how they were rated, the following becomes evident:

- The majority of the cricket fields were rated 'good-to-very good' by a total of 55 cricketers with no current injury and 22 cricketers with a current injury.
- 24 cricketers with a current injury and 50 cricketers with no current injury rated the concrete cricket nets 'poor-to-good'.
- Of the cricketers with current injury, 14 rated the indoor cricket nets 'good-to-very good'; and out of the cricketers with no current injury rated them either 'very poor' (11) or 'very good' (11).

[8] Of all the facilities available compared to current injury, the cricket field, concrete cricket nets, indoor cricket nets, gym and 'other' were not statistically significantly, with the exception of the pool, which could have been had the sample size been larger.

- 10 cricketers with a current injury and 11 with no current injury rated turf cricket nets ‘good-to-very good’; and 18 cricketers with no current injury rated them ‘average’. This was found to be statistically significant (*p*=.018) with regards to current injuries sustained by cricketers (Table 4.21).
- Majority of the cricketers with a current injury (eight) and those with no current injury (15) rated the gym ‘very poor’.
- Majority of cricketers with a current injury (eight) and those with no current injury (13) rated the pool ‘very poor’. This could have been found to be statistically significant (*p*=.099), if there had been a greater participant group (Table 4.21).

The majority of cricketers rated their cricket fields and nets (concrete and indoor) highly, and their gym and pool poorly. This could mean that the majority of the cricketers do not have access or go to a gym or pool, which supports the assertion in section 4.2.1.1.3 that a difference in the adequacy of facilities was suggested. Turf cricket nets were statistically significant (*p*=.018), which means that the lack of availability and / or state of these cricket nets may have led to a current injury; or in converse that the presence of adequate cricket nets is a predictive factor in reducing current injury.

4.2.1.3.4 **Equipment** (Q26 to Q28 of the CSIQ)

4.2.1.3.4.1 **Equipment available at the clubs** (Q26 of the CSIQ)

None of the equipment available (batting equipment, bowling machine, cricket balls, wicket-keeping equipment and ‘other’) at the clubs were statistically significant. However, of the equipment supplied to the cricketers by the clubs, cricket balls (79) were supplied the most, although it should be noted that 21 cricketers did not have access to cricket balls. This was followed by bowling (34) and wicket-keeping (34) equipment, and batting equipment (31). “Other” unspecified equipment was supplied to 3 players.

Of the equipment supplied by the clubs for the cricketers, cricket balls were the most readily available, and batting equipment was least readily available. The availability of the equipment was not found to be significant when it came to current injuries. Therefore it could be said that the lack of equipment available to the cricketers was not a predictor of injury. It may also be true that at the Premier League level, the majority, if not all, have their own equipment (Woolmer, Noakes and Moffett, 2008).

4.2.1.3.4.2 Protective equipment supplied by the clubs (Q27 and Q28 of the CSIQ)

None of the protective equipment supplied to the club (arm, chest and thigh guards; batting helmets and pads; box (groin); chest guards; wicket-keeping gloves and pads; and 'other') were statistically significant.

However, of the protective equipment supplied by the clubs:

- Seven cricketers benefited from arm guards;
- Ten from batting helmets;
- Eight from batting pads;
- Seven from box (groin);
- Seven from chest guards,
- Nine from thigh guards;
- 11 from wicket-keeping gloves and pads and
- Two from 'other' equipment.

Protective equipment that was most readily supplied was batting helmets and batting pads, with the less readily supplied being chest and arm guards, and box (groin).

The supply of protective equipment was not found to be a predictor of current injury in Premier League cricketers. This may be due to the reasons suggested above.

4.2.1.3.5 Coaching

4.2.1.3.5.1 Coaches age versus current injury (Q29 and Q30 of the CSIQ)

The age of the coach versus current injury was not statistically significant. However, out of a total of 74 cricket players with a coach, only 22 (29.7%) suffered from a current injury which was associated with a higher mean age of the coaches as compared to those who had no current injury. This would suggest that the older the coach the more likely a cricket player within their team is likely to be injured which contradicts the expectation that older coaches have greater experience which would mitigate against injury (Woolmer, Noakes and Moffett, 2008; Knowles, Marshall, Bowling, Loomis, Millikin, Yang and Mueller, 2009). However, it is also likely that younger coaches have greater levels of training as this is now a requirement within the sporting arena. In this study conclusive recommendations and further statistical analysis in order to evaluate these assertions were not possible due to the small sample size of coaches and therefore it is suggested that this area be further investigated.

4.2.1.3.5.2(a) Number of Years Coaching Cricket (Q31 of the CSIQ)

There is no significant difference in mean number of years a coach has coached cricket between those with or without injury. However, it is noted that the results of this analysis follow a similar trend as portrayed in Section 4.2.1.3.2.1.

4.2.1.3.5.2(b) **Number of years coaching Premier League cricket** (Q32 of the CSIQ)

There is no significant difference in mean number of years a coach has coached premier league cricket between those with or without injury. However, it is noted that the results of this analysis follow a similar trend as portrayed in 4.2.1.3.2.1.

4.2.1.3.5.3 **Levels of cricket coached** (Q35 of the CSIQ)

4.2.1.3.5.3.1 Primary school

There was no association between coaching Primary school cricket players and current injury.

4.2.1.3.5.3.2 High school

Similar to Primary school cricket players there was no association between coaching High school cricket players and current injury.

4.2.1.3.5.3.3 Club level

This was a control question to insure that respondents were actually all coaches at the club level. So no intended statistics were to be drawn from this question.

4.2.1.3.5.3.4 Provincial level

There was no association between coaching provincial level cricket players and current injury. However, it is of interest to note that more injuries tended to occur with those coaches who had no provincial level experience which support the findings of Knowles *et al.* (2009).

4.2.1.3.5.3.5 National level

Table 4.22: Cross tabulation of the association between national level coached and current injury

			Current injury		Total
			No injury	Injury	
National level	No	Count	52	22	74
		% within National level	70.3%	29.7%	100.0%
Total		Count	52	22	74
		% within National level	70.3%	29.7%	100.0%

Table 4.23: Chi-square tests calculated for Table 4.22

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	74

a. No statistics are computed because National level is a constant.

It is of significance that none of the coaches (Tables 4.22 and 4.23) had national level coaching experience as this may have resulted in a more homogenous group of coaches therefore resulting in very few analyses that would be statistically significant when using various levels of coaching (Section 4.2.1.3.5) as factors in regression analysis.

4.2.1.3.5.4 **Permanent coaches and coaching qualification(s)** (Q38, Q33 and Q34 of the CSIQ)

The association between coaching qualification and current injury was not statistically significant at the 95% level. The reason for it not being significant may be due to the sample size.

Not withstanding the sample size it is assumed that coaches with coaching qualifications would result in a significantly lower injury rate (Shaw, Howat, Trainor and Maycock, 2004), based on their ability to regulate training schedules. Perhaps the statistical significance was not achieved if it is considered that the role of the coach is less prominent in a non-professional (amateur) setting and the players focus is not on obtaining professional sponsorship or financial gain from participation in cricket; thus further eroding the principle powers the coach would have at a professional level. These parameters were not considered in this study and it is suggested that future research consider these.

4.2.1.3.6 **Training completed** (Q9, Q12, Q13 and Q36 of the CSIQ)

4.2.1.3.6.1 **Training** (Q9 of the CSIQ)

The t-test results below (Tables 4.54 and 4.55) indicate that there are no statistically significant differences in the mean number of hours spent on training between those who sustained current injuries and those who did not (p>0.05).

Table 4.24: T-Test results for training

Group Statistics

	Current injury	N	Mean	Std. Deviation
Hours spent Batting training	No injury	68	2.24	2.228
	Injury	31	1.89	1.940
Hours spent Bowling training	No injury	69	2.22	2.436
	Injury	31	2.61	1.797
Hours spent Fielding training	No injury	66	1.34	1.406
	Injury	31	1.06	.793

Table 4.25: Independent samples test for training

Independent Samples Test				
		t-test for Equality of Means		
		t	df	*p*
Hours spent Batting training	Equal variances assumed	.755	97	.452
Hours spent Bowling training	Equal variances assumed	-.804	98	.423
Hours spent Fielding training	Equal variances assumed	1.001	95	.319

From Tables 4.24 and 4.25 it can be seen that there was no correlation between the number of hours spent training (batting, bowling and fielding) and the prevalence of current injury ($p>0.05$).7 This result does not concur with the literature (Ireland and Micheli, 1987; Williams, Hawley, Black, Freke and Simms, 1988; Collins, Wagner, Peterson and Storey, 1989; Korkia, Tunstall-Pedoe and Maffulli, 1994; Burns, Keenan and Redmond, 2003; Shaw *et al*., 2004). Possible reasons include the that the level of training is moderate in nature (Shaw *et al*., 2004) and does not prescribe to the level of intensity as would be seen at the professional level.

4.2.1.3.6.2 Pre-season training (Q12 and Q13 of the CSIQ)

Forty-one-point-seven percent (41.7%) (10 / 24) of those that had done no pre-season training had incurred a current injury, whereas 27.3% (21 / 77) of those players who were not involved in pre-season training had incurred a current injury. Therefore, it would seem that pre-season training is linked to a higher likelihood of injury. However this association was found to be statistically insignificant (p=.182) with regards to current injury. Thus, it could be stated that the lack of pre-season training is not a reliable independent predictor of current injury, but may assist with predisposing the cricketer to current injury. The effects of cross-training or cricketers participating in other sports between cricket seasons should be investigated as factors being enablers or detractors of injuries.

4.2.1.3.6.3 **General fitness training** (Q36.1 of the CSIQ)

Only 64 (86.5%) of cricketers had trained for general fitness, and of these, 17 (26.6%) sustained a current injury. Of those who were not involved in general fitness training, 3 (30.0%) had sustained a current injury. This may be due to the reasons expressed above in pre-season training (Section 4.2.1.3.6.2).

4.2.1.3.6.4 **Endurance training** (Q36.2 of the CSIQ)

Nineteen out of 20 cricketers with current injuries were not involved in endurance training.

Of those cricketers who were involved in endurance training, one (10%) had a current injury, whereas 19 (27%) who were not involved sustained a current injury. It therefore seems that there is a pattern with regards to not having completed endurance training and the prevalence of current injuries. Yet, it was not found to be statistically significant (p=.192). This would concur with the fact that many of the injuries were mild-to-moderate musculoskeletal injuries which would indicate that the cricketers had a particular tendency towards repetitive sprains and strains (as a result of lack of endurance training). As a limitation of this study may have been the sample size, it is recommended that future studies reassess the relationship between the levels of endurance training and the rate of injury occurrence, prevalence and incidence.

4.2.1.3.6.5 **Speed training** (36.3 of the CSIQ)

Table 4.26: Cross tabulation of the association of current injury and speed training

Crosstab

		Current injury				Total	
		No injury		Injury			
		Count	%	Count	%	Count	%
Speed training	yes	24	**32.4%**	14	**18.9%**	**38**	**51.4%**
	no	30	**40.5%**	6	**8.1%**	**36**	**48.6%**
Total		**54**	**73.0%**	**20**	**27.0%**	**74**	**100.0%**

Table 4.27: Chi-square tests calculated for Table 4.62

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	3.815[b]	1	.051

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.73.

From Table 4.26, it can be seen that of those with no current injury, the majority (30 / 54 = 55%) was not involved in speed training. This is contrary to what is found in the 14 (70%) players with a current injury who practiced speed training. This may reflect that speed training seems to be a risk factor for current injury, the magnitude of which may have been attenuated by the protective effects of endurance and / or pre-season training. Table 4.27 reflects that speed training was not statistically significant (p=.051), but that it was very close to being significant and could have been shown to be, had the participant sample size been larger or the effects of endurance and pre-season training had been accounted for more accurately in the data collection and analysis.

4.2.1.3.6.6 **Strength training** (Q36.4 of the CSIQ)

Strength training was found not to be statistically significant (p=.331). Therefore, there seems to be no correlation between the strength training and current injury, although there may be a correlation between no strength training and current injury, but no significance was found (p>0.05). Similarly to pre-season (Section 4.2.1.3.6.2) and endurance (Section 4.2.1.3.6.4) training, those who had performed strength training sustained fewer (4 (19.1%)) of the current injuries, as apposed to those who had not performed strength training and sustained current injuries (16 (30.2%)).

4.2.1.3.6.7 **Skills training** (36.5 of the CSIQ)

There seems to be a correlation between having carried out skills training and the prevalence of a current injury, but this was not statistically significant (p=.551). Of those who were involved in skills training, 19 (27.9%) sustained a current injury, whereas only one (16.7%) player sustained a current injury having not been involved in skills training. This is similar to speed training (Section 4.2.1.3.6.5) and that both speed training and skills training seem to be specific to the sport and therefore seem to predispose to current injury more so than pre-season (Section 4.2.1.3.6.2), endurance (Section 4.2.1.3.6.4) and strength training (Section 4.2.1.3.6.6).

4.2.1.3.7 **Sponsorship** (Q43 and Q44 of the CSIQ)

The majority of the cricketers had team sponsorship, and this was found not to be statistically significant with the current injury at the 95% level. As sponsorship is utilized for the purchase of cricket equipment and / or training gear so it would be expected that further analysis of these variables would result in a non-significant finding. These are discussed in Sections 4.2.2.3.4.1 and 4.2.2.3.4.2.

4.2.1.4 Binary logistic regression for current injury

4.2.1.4.1 Logistic regression (current injury) and selected injury questions

Table 4.28: Variables in the equation (equipment)

		df	*p*	Exp(B)	95.0% C.I. for Exp(B)	
					Lower	Upper
Step 1[a]	Q9.1 Hours batting?	1	.842	.959	.638	1.442
	Q9.2 Hours bowling?	1	.258	1.289	.830	2.004
	Q9.3 Hours fielding?	1	.272	.543	.183	1.614
	Q11 Hours of gym work per week?	1	.527	1.097	.823	1.464
	Q12 Any pre-season training? (yes)	1	.230	.306	.044	2.112
	Q15 Do you have any injuries? (yes)	1	.997	3164880234.18	.000	.
	Q25.1 Cricket field?	3	.166			
	Q25.1 (very poor)	1	.342	.250	.014	4.354
	Q25.1 (poor)	1	.344	.337	.035	3.206
	Q25.1 (average)	1	.024	.131	.022	.767
	Q26.1 Batting equipment?	1	.242	.247	.024	2.568
	Q26.2 Bowling machine?	1	.794	1.250	.236	6.627
	Q26.3 Cricket balls?	1	.962	.937	.064	13.809
	Q26.4 Wicket-keeping equipment?	1	.823	1.281	.146	11.201
	Q26.5 ‘Other’?	1	.999	.000	.000	
	Constant	1	.997	.000		

a. Variable(s) entered on step 1: Q9.1, Q9.2, Q9.3, Q11, Q12, Q15, Q25.1, Q26.1, Q26.2, Q26.3, Q26.4, and Q26.5.

The Table 4.28 reflects that the condition of the cricket field as rated on a Likert scale (1-is very poor to 5-is very good), that an average rating for a cricket field is a significant predictor of current injury (*p*=.024). Whereas, the cricket nets (concrete, indoor and turf), gym and pool were not. Additionally, Exp(B) indicated that good conditions of the cricket field were related to a decreasing odds ratio of injury.

4.2.1.4.2 Logistic regression (current injury) and selected coaching parameters

None of the independent variables relating to coaches information were significant predictors of current injury as can be seen from the Tables 4.36-4.67.

Selected coaching parameters were not significantly related to the current injury which concurs with Sections 4.2.1.3.5.1, 4.2.1.3.5.2 and 4.2.1.3.6, the coaching parameters (years coaching cricket, years coaching Premier League cricket, and training that has been completed). It is therefore suggested that future research be undertaken in this area to clarify the contribution of these factors as dependant or independent in injury causation; especially with a larger sample size and coaching population that is less homogenous.

4.2.1.4.3 Logistic Regression for the presence of a coach in a team versus whether or not there was first aid at matches

Table 4.29: Case processing summary (First Aid)

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	101	100.0
	Missing Cases	0	.0
	Total	101	100.0
Unselected Cases		0	.0
Total		101	100.0

a. If weight is in effect, see classification table for the total number of cases.

Table 4.30: Dependant variable encoding (First Aid)

Dependent Variable Encoding

Original Value	Internal Value
No injury	0
Injury	1

Table 4.31(a): Variables in the Equation (First Aid)

		B	S.E.	Wald	df	*p*	OR	95.0% C.I. for OR	
								Lower	Upper
Step 1(a)	Q39 (baseline – no coach)			8.146	2	.017			
	First aid – (yes)	-1.678	.590	8.086	1	.004	.187	.059	.594
	First aid - (no)	-1.050	.640	2.691	1	.101	.350	.100	1.227
	Constant	.357	.493	.524	1	.469	1.429		

a. Variable(s) entered on step 1: q39.

Table 4.31(b): Results of logistic regression (presence of First Aid)

		B	S.E.	Wald	df	*p*	Exp(B)
Step 0	Constant	-.678	.211	10.378	1	.001	.507

The results of this regression analysis (Table 4.78(a)) supports the findings presented in Section 4.2.1.3.2.1 indicating that the presence of First Aid at matches is an independent protective factor with the regards to the development of current injuries (p=.004). It should be noted that the B-value is a negative indicating that an increase in First Aid results in a decrease in the number of injuries this is in contrast to the those teams that have no coach / First Aid in which a positive association can be assumed indicating that with decreased numbers of coaches / First Aid there is also a decreased reporting of injuries. Furthermore, it is of interest to note that the absence of a coach (no data on the presence of First Aid) or the assumption that without a coach there is no First Aid; indicates a significant finding (p=.017).

4.2.2 <u>Prevalence of previous Injuries</u>

4.2.2.1 Demographics

4.2.2.1.1 Prevalence and associations of previous Injury (Q16.2 of the CSIQ)

Table 4.32: Prevalence of previous injuries

Previous Injury	Number of previous injuries	Prevalence
Achilles tendon	1	1.0%
Ankle	6	5.9%
Elbow	1	1.0%
Foot / Toes	4	4.0%
Hamstring (back of leg)	1	1.0%
Hand / Finger	6	5.9%
Hip / Groin	2	2.0%
Knee	8	7.9%
Leg / Calf	2	2.0%
Lower back	10	9.9%
Quadriceps (front of leg)	1	1.0%
Shoulder	4	4.0%
Total	46	45.6%

Table 4.32 provides a summary of the previous injuries sustained. Injuries to the lower back were the most prevalent, followed by injuries to the knee and ankle.

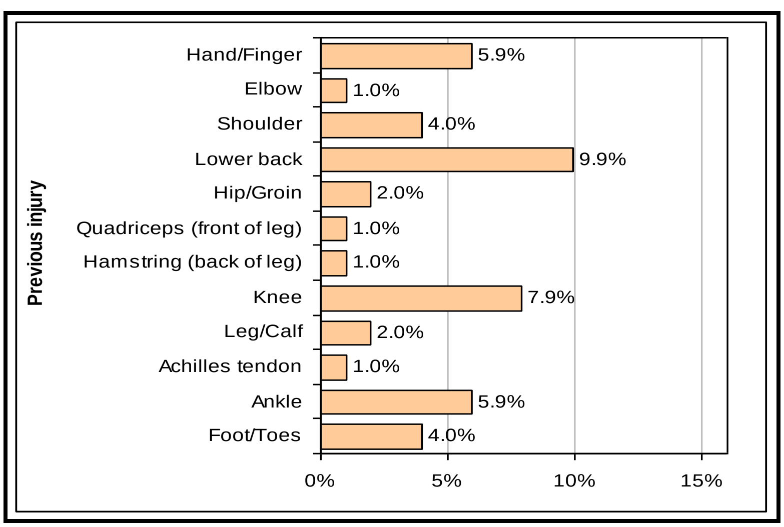

Figure 4.4: Prevalence of previous injury

From the Table 4.32 and Figure 4.4 on the prevalence of previous injury, it can be seen that lower back accounted for the highest prevalence with ten (9.9%), followed by knee with eight (7.9%), then ankle and hand / finger with six (5.9%) each, then Foot / Toes and shoulder with four (4.0%), leg / calf and hip / groin with two (2.0%) each, and Achilles tendon, hamstring, quadriceps, and elbow with one (1.0%) each. The lower limb accounted for 25 (30.8%), upper limb for 11 (10.9%), and the back for ten (9.9%) of the previous injuries.

Lower back injuries, as well as knee and ankle injuries, accounted for most of the previous injuries, which seems to follow the same trends discussed under current injuries (Section 4.2.1.1.1). Compared to past studies, lower back and knee injuries followed similar trends whereas ankle injuries did not. Lower back and ankle injuries followed similar magnitudes but not for knee injuries (Orchard and James, 2002; Orchard, James and Portus, 2006).

The previous studies reported the similar injury prevalence findings for hand / finger, shoulder, hip / groin, leg / calf, and quadriceps injuries (Orchard and James, 2002; Orchard, James and Portus, 2006). Although the trends were very similar, the magnitudes differed significantly for all, except shoulder injuries when compared to past research (Orchard and James, 2002; Orchard, James and Portus, 2006).

Injury prevalence differed significantly for the ankle, foot / toes, Achilles tendon, elbow, and hamstring injuries (Orchard and James, 2002; Mansingh, 2006; Orchard, James and Portus, 2006). The assumption is being made at this point that these injuries differed because amateur cricketers are more likely to rotate between positions in the field as apposed to professional cricketers who are more likely to dedicate themselves to specific fielding positions (Woolmer, Noakes and Moffett, 2008). Although the trends differed significantly, the magnitudes were similar, except hamstring injuries, when compared to past studies (Orchard and James, 2002; Orchard, James and Portus, 2006).

This study found a similar injury prevalence for lower limb, upper limb, and back and trunk injuries to the other studies (Orchard, James and Portus, 2006; Orchard and James, 2002; Stretch, 2003). Although the magnitudes of the areas injured differed significantly (Orchard and James, 2002; Stretch, 2003; Mansingh *et al.,* 2006). This may be due to the factors reported above.

Lower back, knee and ankle injuries were the most prevalent previous injuries.

In conclusion, it can be seen that in terms of individual previous injuries, the lower back injuries accounted for the majority of current injuries to Premier League cricketers, and the Achilles tendon, elbow, hamstring and quadriceps the least of the injuries. However, the cumulative lower limb injuries accounted for the most injuries and the cumulative back injuries accounted for the least of the current injuries. Overall, the injuries tended to follow the trends of previous studies, but not in terms of the reported magnitudes of these injuries.

4.2.2.1.2 Age (Q1 of the CSIQ)

Table 4.33: Prevalence of previous injuries compared to Age

Previous Injury	Age group							
	Under 21		21-25		26-and-over		Total	
Achilles tendon	0	0.0%	0	0.0%	1	1.0%	1	1.0%
Ankle	2	2.0%	3	3.0%	1	1.0%	6	5.9%
Elbow	0	0.0%	1	1.0%	0	0.0%	1	1.0%
Foot / Toes	1	1.0%	3	3.0%	0	0.0%	4	4.0%
Hamstring (back of leg)	1	1.0%	0	0.0%	0	0.0%	1	1.0%
Hand / Finger	3	3.0%	1	1.0%	2	2.0%	6	5.9%
Hip / Groin	0	0.0%	2	2.0%	0	0.0%	2	2.0%
Knee	3	3.0%	4	4.0%	1	1.0%	8	7.9%
Leg / Calf	1	1.0%	0	0.0%	1	1.0%	2	2.0%
Lower back	7	6.9%	1	1.0%	2	2.0%	10	9.9%
Quadriceps (front of leg)	0	0.0%	1	1.0%	0	0.0%	1	1.0%
Shoulder	0	0.0%	1	1.0%	3	3.0%	4	4.0%
Total	18	17.9%	17	17.0%	11	11.0%	46	45.6%

The majority of the previous injuries (Tables 4.33 and 4.34) were sustained by the 18 to 25 year old players, with 34.9% of the injuries, and with the under 21's sustaining 17.9% of the injuries, followed closely by the 21-25 at 17.0%, and then the 26-and-over sustaining 11.0% of the previous injuries.

This does not agree with Stretch (2003), who found that younger players (up to 24 years of age) sustained 57% of the first time injuries, and older players (over 24 years of age) sustained 58.7% recurrence of injuries from the previous season. This disparity may be related to the fact that this study also researched previous injury whereas Stretch (2003) researched only current injuries.

Table 4.34: Association between previous injuries and age groups

Previous Injury[9]		Age group								Chi square	df	*p*
		Under 21		21-25		26-and-over		Total				
		Count	%	Count	%	Count	%	Count	%			
m. Lower back	Yes	7	6.9%	1	1.0%	2	2.0%	10	9.9%	5.278	2	.071
	No	31	30.7%	34	33.7%	26	25.7%	91	90.1%			
p. Shoulder	Yes	0	.0%	1	1.0%	3	3.0%	4	4.0%	5.037	2	.081
	No	38	37.6%	34	33.7%	25	24.8%	97	96.0%			

From Table 4.33, it can be seen that the lower back accounted for 9.9% of the previous injuries, with the majority being sustained by the under-21 year age group (6.9%). This may be due to the reasons stated under current injuries (Section 4.2.1.1.2).

Like the results from current injuries (Section 4.2.1.1.2) previous injuries were also statistically insignificant. This may be due to the same reasons as stated in Section 4.2.1.1.2. Although, lower back (p=.071) and shoulder (p=.081) injuries were not statistically significant (Table 4.34), they may have been if the sample size had been larger.

[9] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to age, except for lower back and shoulder injuries, which may have been had the sample group been larger.

The 18 to 25 age group suffered the most from previous injuries, with the under-21's and 21-to-25 year age groups incurring similar prevalence of injuries. The 26-and-over incurred significantly less previous injuries than the other age groups (Table 4.33).

The most prevalent previous injury in each of the age groups was lower back (under-21), knee (21-to-25), and shoulder (over-26) age group.

The least prevalent was foot / toes, hamstring and leg / calf injuries in the under 21 year age group; elbow, hand / finger, lower back, quadriceps and shoulder injuries in the 21-to-25 year age group; and Achilles tendon, ankle, knee and leg / calf injuries in the 26 year and above age group.

Overall, the least prevalent injuries were to the Achilles tendon, elbow, hamstring and quadriceps. This follows the trends stated in past studies for injuries to the Achilles tendon, elbow and quadriceps. But in other studies hamstring injuries was found to be the most frequent injury (Orchard and James, 2002; Hoskins and Pollard, 2005).

The results of this study are in contrast to the research conducted by Orchard and James (2002), which may be due to the reasons stated under current injuries (Section 4.2.1.1.2).

To conclude, it would seem that the younger (18 to 25 year) age group sustained the majority of the previous injuries, with the 26-and-over sustaining the least. This correlates with the trends found with current injuries (Section 4.2.1.1.2). However the under-21 age group suffered the most from lower back injuries, with the 21-to-25 age group sustaining the least, which is in contrast to the current injury findings (Section 4.2.1.1.2).

4.2.2.1.3 **Ethnicity** (Q2 of the CSIQ)

Table 4.35: Prevalence of previous injuries compared to ethnicity

Previous Injury	Ethnicity									
	Black		White		Asian		Indian		Total	
Achilles tendon	0	0.0%	0	0.0%	0	0.0%	1	1.0%	1	1.0%
Ankle	0	0.0%	5	5.0%	0	0.0%	1	1.0%	6	5.9%
Elbow	0	0.0%	1	1.0%	0	0.0%	0	0.0%	1	1.0%
Foot / Toes	0	0.0%	1	1.0%	1	1.0%	2	2.0%	4	4.0%
Hamstring (back of leg)	0	0.0%	1	1.0%	0	0.0%	0	0.0%	1	1.0%
Hip / Groin	0	0.0%	1	1.0%	0	0.0%	1	1.0%	2	2.0%
Knee	0	0.0%	5	5.0%	0	0.0%	3	3.0%	8	7.9%
Leg / calf	0	0.0%	2	2.0%	0	0.0%	0	0.0%	2	2.0%
Lower back	0	0.0%	7	6.9%	1	1.0%	2	2.0%	10	9.9%
Quadriceps (front of leg)	1	1.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%
Shoulder	0	0.0%	2	2.0%	0	0.0%	2	2.0%	4	4.0%
Hand / finger	1	1.0%	2	2.0%	0	0.0%	3	3.0%	6	5.9%
Total	2	2.0%	27	26.95	2	2.0%	15	15.0%	46	45.6%

Table 4.35 demonstrates that the ethnic group which sustained the highest number of previous injuries were the White players with a total number of 27 (27.0%) injuries, followed by Indian players with 15 (15.0%) injuries. Black and Asian players reported with two (2.0%) injuries each.

This is the same trend that was found with current injuries (Section 4.2.1.1.2). Although the prevalence of lower back previous injuries is higher in the White players and lower in the Indian players, it is the inverse to what was found in lower back current injuries (Section 4.2.1.1.3). This difference may concur with the Kirkaldy-Willis (1992) discussion in section 4.2.1.1.2 that the White players are in general older or have increased experience over the Indian players.

From Table 4.36, like current injuries it can be seen that there were no Coloured players involved in this study.

Table 4.36: Association between previous injuries and ethnic groups																
Previous Injury[10]		Ethnicity												Chi square	df	*p*
		Black		White		Coloured		Asian		Indian		Total				
		Count	%	Count	%	Count	%	Count	%	Count	%	Count	%			
a. Foot / Toes	Yes	0	.0%	1	1.0%	0	.0%	1	1.0%	2	2.0%	4	4.0%	8.800	3	.032
	No	11	10.9%	58	57.4%	0	.0%	2	2.0%	26	25.7%	97	96.0%			
g. Quadriceps (front of leg)	Yes	1	1.0%	0	.0%	0	.0%	0	.0%	0	.0%	1	1.0%	8.264	3	.041
	No	10	9.9%	59	58.4%	0	.0%	3	3.0%	28	27.7%	100	99.0%			

Previous injuries sustained by Black players were to the quadriceps (1.0%) and hand / finger (1.0%); by White players were to the lower back (6.9%), ankle and knee (4.0% each), leg / calf, shoulder and hand / finger (2.0% each), and foot / toes, hamstring, hip / groin and elbow (1.0% each); by Indian players were to the knee and hand / finger (3.0%), foot / toes, lower back and shoulder (2.0% each), and ankle, Achilles tendon and Hip / Groin (1.0% each); and by Asian players were to the foot / toes and lower back (1.0% each).

White players suffered the most with previous lower back injuries (6.9%), followed by Indian (2.0%) and Asian (1.0%) players; and with previous ankle and knee injuries (5.0% each), followed by Indian players (1.0% and 3.0%, respectively). This is in contrast to Indian players sustaining the majority of current lower back injuries (Section 4.2.1.1.2), which may be due to the Indian players sustaining current lower back injuries for the first time.

[10] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to ethnicity.

Foot / toes injuries was statistically significant (*p*=.032), and so was the quadriceps injuries (*p*=.041) (Table 4.36). This may mean that these injuries were common injuries when it came to injuries to Premier League cricketers.

In conclusion, White and Indian players incurred the most previous injuries, with lower back being the most prevalent injury, especially amongst the White ethnic group. These trends may be reflective of the fact that the majority of participants in this study were White and Indian players, and the least were Asian players. Unfortunately it seems that no literature has documented previous injuries and as such no comparison can be made to except or refute the outcomes of this study.

4.2.2.1.4 **Height versus weight** (Q3 and Q4 of the CSIQ)

Research by Prentice (2006) and Saglimbini (2007) suggests that height and weight ratios (body mass index) has a bearing on or influences injury rates. However in this study height and weight ratios did not seem to influence injury rates.

4.2.2.1.5 **Medical aid** (Q6 of the CSIQ)

The association of previous injury and medical aid was found not to be statistically significant but, of those with a previous injury, 25 (75.8%), and those with no previous injury 48 (71.0%) had medical aid. The 75.8% of cricketers with a previous injury and medical aid is very similarly to the findings from Section 4.2.1.1.5 in which it was found that 77.8% of cricketers with current injury had a medical aid.

In terms of the literature, no information was found addressing the relationship between cricket injuries and the prevalence and incidence of previous cricket injuries. It is therefore suggested that this area also be investigated as put forward under current injuries (section 4.2.1.1.5).

4.2.2.2 Previous injuries and risk factors

4.2.2.2.1 Clubs and number of players (Q5 of the CSIQ)

Table 4.37: Prevalence of previous injuries compared across clubs

Previous Injury	African Warriors		Amanzimtoti		Berea Rovers		Chatsworth United		Collegians		Crusaders		Dawnheights		Delta		Pinetown		Tertiary		Topham		Total	
Achilles tendon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%	1	1.0%
Ankle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%	1	1.0%	1	1.0%	0	0.0%	2	2.0%	1	1.0%	0	0.0%	6	5.9%
Elbow	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%
Foot / Toes	0	0.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	2	2.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	4	4.0%
Hamstring	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%
Hand / finger	1	1.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	1	1.0%	1	1.0%	1	1.0%	0	0.0%	1	1.0%	6	5.9%
Hip / Groin	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	1	1.0%	2	2.0%
Knee	0	0.0%	0	0.0%	1	1.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	3	3.0%	0	0.0%	1	1.0%	2	2.0%	8	7.9%
Leg / calf	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	2	2.0%
Lower back	0	0.0%	1	1.0%	0	0.0%	1	1.0%	2	2.0%	1	1.0%	2	2.0%	0	0.0%	2	2.0%	1	1.0%	0	0.0%	10	9.9%
Quadriceps	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%
Shoulder	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	1	1.0%	1	1.0%	1	1.0%	4	4.0%
Total	2	2.0%	1	1.05	2	2.05	4	4.0%	4	4.0%	3	3.0%	7	7.0%	4	4.0%	8	8.0%	5	5.0%	6	6.0%	46	45.6%

Pinetown cricket club reported two (2.0%) ankle and lower back injuries, one (1.0%) leg / calf, hip / groin, shoulder and hand / finger injury. Lower limb injuries accounted for four (4.0%), upper limb two (2.0%) and back two (2.0%), which has a similar pattern to the trend presented in past studies (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003).

Similarly Dawnheights reported two (2.0%) foot / toes and lower back injuries, and one (1.0%) ankle, shoulder and hand / finger injury. Lower limb accounted for three (3.0%), upper limb two (2.0%) and back two (2.0%) injuries, which follows the trend as stated previously. With Topham having reported two (2.0%) knee injuries, and one (1.0%) Achilles tendon, hip / groin, shoulder and hand / finger injuries. Therefore, lower limb accounted for four (4.0%), upper limb two (2.0%) and back zero (0%) of the injuries.

A similar trend was followed at Tertiary Club who reported one (1.0%) foot / toes, ankle, knee, lower back and shoulder injury. Lower limb injuries accounted for three (3.0%), upper limb one (1.0%) and lower back one (1.0%) of the injuries. This was similar to injuries reported by Chatsworth United. This was also reflected in Collegians Club statistics which reported two (2.0%) lower back injuries, and one (1.0%) ankle and hamstring injury. Again lower limb injuries accounted for two (2.0%), upper limb zero (0%) and back two (2.0%) of the injuries.

It seems that Delta reflected only three (3.0%) knee injuries, and one (1.0%) hand / finger injury; with the lower limb injuries accounting for four (4.0%), upper limb injuries for two (2.0%) and back two (2.0%) of the injuries. This is slightly higher than the Crusaders Club which reported one (1.0%) ankle, leg / calf and lower back injury. Lower limb accounted for two (2.0%), upper limb zero (0%) and back one (1.0%) of the injuries.

The following three clubs reported the least number of previous injuries:

- African Warriors reported one (1.0%) quadriceps and one (1.0%) hand / finger injury. Therefore the lower limb accounted for one (1.0%), and upper limb one (1.0%) injury.
- Berea Rovers reported one (1.0%) knee and one (1.0%) elbow injury. Similarly to African Warriors the lower limb accounted for one (1.0%) and the upper limb one (1.0%) injury.

- Amanzimtoti reported one (1.0%) lower back injury.

The clubs which showed a similar lower limb, upper limb and back trend were African Warriors, Chatsworth United, Dawnheights, Delta, Pinetown, Tertiary and Topham cricket clubs. Those that did not show similar trends were Amanzimtoti, Berea Rovers, Collegians and Crusaders cricket clubs, which may be due to the poor participant rates from these clubs (Section 4.1.4.2).

The clubs which presented with the majority of previous injuries were the clubs in which the majority of participants were 'White' (Pinetown and Tertiary) and 'Indian' (Dawnheights and Topham) players, with the 'Black' (African Warriors) cricket club suffering the least of the injuries, which may be due to the very poor participant turn-out from this club and lack of Black cricket players on a whole in the Premier League.

4.2.2.2.2 Role of the Player

Table 4.38: Prevalence of previous injuries compared across role of player

Previous Injury	Fast / Medium bowler		Slow / Spin bowler		Top order (1-3) batsman		Middle order (4-6) batsman		Wicket-keeper		Fielder	
Achilles tendon	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%
Ankle	4	4.0%	2	2.0%	2	2.0%	2	2.0%	0	0.0%	1	1.0%
Elbow	0	0.0%	0	0.0%	1	1.0%	0	0.0%	1	1.0%	0	0.0%
Foot / Toes	4	4.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	1	1.0%
Hamstring	1	1.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	1	1.0%
Hand / finger	0	0.0%	4	4.0%	2	2.0%	3	3.0%	2	2.0%	2	2.0%
Hip / Groin	1	1.0%	1	1.0%	2	2.0%	0	0.0%	0	0.0%	2	2.0%
Knee	5	5.0%	1	1.0%	4	4.0%	3	3.0%	2	2.0%	3	3.0%
Leg / calf	1	1.0%	0	0.0%	1	1.0%	1	1.0%	0	0.0%	1	1.0%
Lower back	7	6.9%	3	3.0%	4	4.0%	4	4.0%	0	0.0%	2	2.0%
Quadriceps	0	0.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%
Shoulder	0	0.0%	3	3.0%	2	2.0%	1	1.0%	0	0.0%	2	2.0%
total	25	24.9%	16	16.0%	19	19.0%	17	17.0%	5	5.0%	15	15.0%

Note: Players had multiple roles

From Table 4.38, it can be seen that the role that presented with the most previous injuries was the fast / medium bowler with 23 (22.9%) previous injuries, followed by the top (1-3) order batsman with 19 (19.0%) previous injuries. Middle (4-6) order batsman had 17 (17.0%) previous injuries, fielder with 15 (15.0%) injuries, then the slow / spin bowler with 14 (14.0%) previous injuries, and lastly the wicket-keeper with five (5.0%) previous injuries.

This follows the same trend as that reported for current injuries (Section 4.2.1.1.6), except for the top order and middle order batsman. The middle order (4-6) batsman reported more current injuries than top order (1-3) batsman, but the trend was reversed for previous injuries. Possible consideration needs to be given to the fact that the top order batsmen are generally those players with increased batting experience (therefore the average age is slightly older) than compared to the middle order batsman whose average experience / age is slightly less / younger. This generally results from the coach utilizing physically and mentally stronger players at the upper end of the batting order. This assertion still however needs a formal evaluation.

Bowling (fast / medium and slow / spin) accounted for the majority of the previous injuries, with 37 injuries, following a similar pattern and similar magnitude as previous studies (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Hoskins and Pollard, 2005; Orchard, Newman, Stretch, Frost, Mansingh and Leipus, 2005; Stuelcken, Ginn and Sinclair, 2007; Stretch, 2007; Stuelcken, Ginn and Sinclair, 2008; Ferdinands, Kersting and Marshall, 2009).

Batsmen (top and middle order) followed second highest number of previous injuries, accounting for 36 (36.0%) of injuries. Past studies followed the same pattern and similar magnitude of injury profiles even though they are at a professional level (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Stretch, 2007).

Lastly, fielders and wicket-keepers accounted for 20 (19.9%) of the previous injuries to, which followed the same pattern and similar magnitude to past studies (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Stretch, 2007).

Comparing these figures with those of the current injuries, it can be seen that the trend and magnitude of the previous injuries is very similar to the results for bowling, batting, and fielding and wicket-keeping.

This may mean that the role that is the most at risk for injury in the cricket team is the fast / medium bowler, followed by the top or middle order batsman. So, when a cricketer has the combined roles of a fast / medium bowler and a top or middle order batsman, as an all-rounder may do, his risk for injury could increase further. However, it could be argued that a utility player (who participates in several different roles) may be protected from the injury rates associated with each of the individual roles. This is based on the findings in the current injury section (Section 4.2.1.3.6) where endurance, strength and pre-season training were all protective from current injuries. Further analysis of this will be seen in section 4.2.2.3.6.

In conclusion, the fast / medium bowler is the most at risk of developing lower back injuries, followed by the batsman (top or middle order). The batsman (top and middle order) is the most at risk for knee injuries, followed by the fast/ medium bowler.

Table 4.39: Association between previous injury and the role of the Fast / Medium Bowler										
Fast / Medium Bowler[11]		Yes		No		Total		Chi square	df	*p*
		Count	%	Count	%	Count	%			
e. Foot / Toes	Yes	4	4.0%	0	.0%	4	4.0%	5.396	1	.020
	No	40	39.6%	57	56.4%	97	96.0%			
h. Hand / Finger	Yes	0	.0%	6	5.9%	6	5.9%	4.924	1	.026
	No	44	43.6%	51	50.5%	95	94.1%			
m. Lower back	Yes	7	6.9%	3	3.0%	10	9.9%	3.155	1	.076
	No	37	36.6%	54	53.5%	91	90.1%			
p. Shoulder	Yes	0	.0%	4	4.0%	4	4.0%	3.215	1	.073
	No	44	43.6%	53	52.5%	97	96.0%			

Fast / medium bowlers sustained seven previous injuries to the lower back; five to the knee; four to the foot / toes and ankle; and one to the leg / calf, hamstring and hip / groin. Of these regions, those that were statistically significant (Table 4.39) were the foot / toes (p=.020) and the hand / finger (p=.026). Lower back (p=.076) and shoulder (p=.073) injuries could have been found to be significant had the sample size for this study been larger (including all the clubs in the greater Durban area from the different leagues). Thus it is recommended that this be further analyzed in future research in so determine whether sample size does indeed play a role.

[11] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to fast / medium bowler.

Table 4.40: Association between previous injury and the role of the Slow / Spin Bowler										
Slow / Spin Bowler[12]		Yes		No		Total		Chi square	df	p
		Count	%	Count	%	Count	%			
h. Hand / Finger	Yes	4	4.0%	2	2.0%	6	5.9%	3.881	1	.049
	No	27	26.7%	68	67.3%	95	94.1%			
p. Shoulder	Yes	3	3.0%	1	1.0%	4	4.0%	3.844	1	.050
	No	28	27.7%	69	68.3%	97	96.0%			

In contrast to fast / medium bowlers, slow / spin bowlers' sustained four previous injuries to the hand / finger; three to the lower back and shoulder; two to the ankle; and one each to the knee and hip / groin. Those regions that were found to be statistically significant (Table 4.40) were the shoulder (*p*=.050) and the hand / finger (*p*=.049).

Stretch (2003) suggests that previous injuries are a strong predictor of a current injury. This concurs with the findings of this study when one compares all the current injury tables (Tables 4.9 – 4.13) to all the previous injury tables.

Table 4.41: Association between previous injury and the role of the Top order (1-3) Batsman										
Top Order (1-3) Batsman[13]		Yes		No		Total		Chi square	df	p
		Count	%	Count	%	Count	%			
j. Hip / Groin	Yes	2	2.0%	0	.0%	2	2.0%	4.204	1	.040
	No	31	30.7%	68	67.3%	99	98.0%			

Top (1-3) order batsmen sustained four previous injuries to the lower back and knee; two to the ankle, hip / groin, shoulder and hand / finger; and one to the Achilles tendon, leg / calf and elbow. However only the hip / groin injury was found to be statistically significant (*p*=.040) (Table 4.41). In a similar manner

[12] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to slow / spin bowler.
[13] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to top order (1-3) batsman.

middle (4-6) order batsmen sustained four previous injuries to the lower back; three to the knee and hand / finger; two to the ankle; and one to the foot / toes, leg / calf, hamstring and shoulder. However, it is noted that none of these injuries were significantly related to the position.

Table 4.42: Association between previous injury and the role of the Wicket-keeper

Wicket-keeper[14]		Yes		No		Total		Chi square	df	*p*
		Count	%	Count	%	Count	%			
d. Elbow	Yes	1	1.0%	0	.0%	1	1.0%	10.324	1	.001
	No	8	7.9%	92	91.1%	100	99.0%			
h. Hand / Finger	Yes	2	2.0%	4	4.0%	6	5.9%	4.687	1	.030
	No	7	6.9%	88	87.1%	95	94.1%			
k. Knee	Yes	2	2.0%	6	5.9%	8	7.9%	2.771	1	.096
	No	7	6.9%	86	85.1%	93	92.1%			

In terms of the wicket-keepers, they sustained two previous injuries to the knee and hand / finger, and one to the elbow. The knee (p=.096) could have been found to be significant had the sample group been larger; and the elbow (p=.001), and the hand / finger (p=.030) were found to be statistically significant (Table 4.42). In contrast to the wicket-keepers, fielders (Table 4.87) sustained three previous injuries to the knee; two to the hip / groin, lower back, shoulder, and hand / finger; and one to the ankle and hamstring. However, only the hip / groin (p=.021) injury was found to be statistically significant in fielders (Table 4.43).

[14] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to wicket-keeper.

Table 4.43: Association between previous injury and the role of the Fielder										
Fielder[15]		Yes		No		Total		Chi square	df	*p*
		Count	%	Count	%	Count	%			
j. Hip / Groin	Yes	2	2.0%	0	.0%	2	2.0%	5.320	1	.021
	No	26	25.7%	73	72.3%	99	98.0%			

With respect to batsmen, wicket-keepers and fielders it would seem that the comparative injuries between current (Tables 4.11 – 4.13) and previous injuries would be similar to the trend suggested by Stretch (2003) with regards to batsmen. However, with the paucity of literature in this area it is suggested that further research be conducted to confirm this finding.

Thus, in conclusion the fast / medium bowlers were the most at risk of previous injury and the wicket-keepers were the least. Lower back injuries accounted for the majority of previous injuries to bowlers (10) and batsmen (8); knee injuries were the most significant previous injury to the fielder (3) and wicket-keeper (2).

[15] Of all the injuries assessed according to Section 4.2, all injuries not denoted in this table were not significantly related to fielder.

4.2.2.2.3 Previous Injury descriptors and the location of the injury

The descriptors of previous injury were as follows:

- Worst Injury (Q.17 of the CSIQ)
  The cricketers were asked to indicate which injury was their worst, if they had indicated more than one injury.
- Activity of Cricket Injury Occurred (Q18 of the CSIQ)
  Cricketers had to indicate in which activity/role of the game they sustained their injury.
- Form of Cricket Injury Occurred (Q19 of the CSIQ)
  Cricket has more than one form that it is played in, so the cricketers had to indicate whether the injury occurred in a T20, 45 or 60 over match.
- Severity of the Injury (Q20 of the CSIQ)
  Here the cricketers had to indicate whether the injury was mild, moderate or severe.
- Effect the Injury had on Cricket (Q21 of the CSIQ)
  Here the cricketer had to indicate whether the injury had no effect, limited effect or prevented the playing of cricket.
- Time Out of Cricket (Q22 of the CSIQ)
  This was used as a measure of the nature of the injury, whether it was acute, sub-acute or chronic in nature.

The regions that did not report any injuries or were not statistically significant are not represented in tabular format in this section, but can be found in Appendix L1 to L20.

With reference to current injuries of the foot / toes (Appendix L1), all descriptors of current injuries were insignificant. However, only one (1.0%) out of four players claimed it was his worst injury. Three (3.0%) identified that the injury occurred while bowling and one while fielding. Two (2.0%) of these injuries occurred in 60 over matches, one in a T20 and one in a 45 over match.

Two (2.0%) of these were reported their pain to be mild, one (1.0%) moderate and one (1.0%) severe. Three (3.0%) of the injuries limited the playing of cricket and one (1.0%) had no effect on the ability to play cricket. Three (3.0%) of these injuries were reported to be acute and one (1.0%) was chronic in nature.

These results indicate that previous foot / toes injuries were not considered to be the worst injury and were most likely to occur while bowling in a 60 over match, be mild in severity and acute in nature, and most likely to only limit the playing of cricket.

With regards to foot / toes injuries and bowling, past studies support the finding that foot / toes injury is highly prevalent in bowlers (especially fast bowlers) (Orchard and James, 2002; Orchard, James and Portus, 2006) and this was found to be the case when it came to current injuries (Section 4.2.1.1.3). When it comes to the nature of the foot / toes injury, past studies reported that, injuries in cricket are acute (Stretch, 2001; Stretch, 2003; Stretch and Orchard, 2003). With regards to the form of cricket, severity, and the effect on cricket, there is no literature to support or contradict the findings of this study.

With reference to current injuries of the ankle (Appendix L2), all descriptors of current injuries were insignificant. However, with respect to the six previous ankle injuries, three (3.0%) players claimed it was their worst injury, with three (3.0%) occurring while bowling, one (1.0%) during batting, fielding and 'other' activity. Three (3.0%) occurred in 45 over matches and three (3.0%) occurred in 60 over matches. Of these one (1.0%) was said to be mild, two (2.0%) were moderate and three (3.0%) were severe. Three (3.0%) prevented the playing of cricket, two (2.0%) limited and one (1.0%) had no effect on playing cricket. Four (4.0%) were acute, one (1.0%) sub-acute, and one (1.0%) was chronic in nature.

With regards to ankle injuries and bowling, past studies support the finding that ankle injury is highly prevalent in bowlers (especially fast bowlers) (Orchard and James, 2002; Orchard, James and Portus, 2006) and this was found to be the case when it came to current injuries (Section 4.2.1.1.3). Past studies reported that on a whole, injuries in cricket are acute (Stretch, 2001; Stretch, 2003; Stretch and Orchard, 2003). With regards to ankle injuries and worst injury reported, the form of cricket, severity, and the effect on cricket, there is no literature to support or contradict the findings of this study.

With reference to current injuries of the Achilles tendon (Appendix L3), all descriptors of current injuries were insignificant. However, one (1.0%) was reported as their worst injury. It occurred while bowling in a 45 over match, was mild, acute in nature, and prevented the playing cricket.

With regards to Achilles tendon injuries, the only reported case occurred while bowling (Orchard and James, 2002). With regards to the nature of the Achilles injury, literature does support that the majority of cricket injuries are acute (Stretch, 2001; Orchard and James, 2002; Stretch, 2003; Stretch and Orchard, 2003). No current Achilles tendon injury was reported and therefore cannot be compared to previous Achilles tendon injury.

With reference to current injuries of the leg / calf (Appendix L4), all descriptors of current injuries were insignificant. However, with respect to the two leg / calf injuries, one player reported it to be their worst injury. Both occurred during 45 over matches, with one occurring during bowling and the other during fielding. For one player the pain was moderate and the other severe. One (1.0%) was acute and the other was chronic in nature, with one (1.0%) preventing and the other limiting the playing of cricket.

From a study by Orchard and James (2002), it can be seen that leg / calf injuries occurred to mainly bowlers (especially fast bowlers). Studies by Stretch (2001) and Stretch and Orchard (2003), reported that most injuries occurred during the longer forms of the game. Studies reported that the majority of the injuries were acute in nature, but do not report on the nature of leg / calf injuries (Stretch, 2001; Orchard and James, 2002; Stretch, 2003; Stretch and Orchard, 2003). With regards to activity of cricket, severity, and effect on playing cricket, no information is available.

When comparing previous leg / calf injuries to current leg / calf injuries (Section 4.2.1.1.3), it was reported to have occurred during 'other' activities during a 45 over match.

The majority of current leg / calf injuries happened while bowling in 60 over matches; were acute in nature, and evenly spread out in terms of effect on playing cricket and severity. It seems that previous leg / calf injuries are very similar with respect to current leg / calf injuries.

With reference to current injuries of the knee (Appendix L5), all descriptors of current injuries were insignificant. However, eight previous knee injuries were reported, with two being reported as their worst injury. Of these, two occurred while bowling, two while batting, three during fielding, and one during wicket-keeping. Two occurred in a T20, two in a 45, and four in 60 over matches. Two were mild, three moderate, and three severe in character, and three were acute with one sub-acute and the other four chronic in nature. Three prevented and five limited the playing of cricket.

There is currently no research which distinguishes knee injuries with respect to activity of cricket, form of cricket, severity, effect on the ability to play cricket and nature of the injury. It should, however, be noted that it had been reported that knee injuries occurred as a result of cross-training during practice (Orchard and

James, 2002), and the majority of injuries in cricket are acute in nature (Stretch, 2001, Orchard and James, 2002; Stretch, 2003; Stretch and Orchard, 2003).

When comparing previous knee injuries to current knee injuries (Section 4.2.1.1.3), the majority of current knee injuries happened while fielding in 60 over matches, were acute in nature, and evenly spread out in terms of effect on playing cricket and severity. It seems that previous knee injuries are very similar with respect to current knee injuries.

With reference to current injuries of the hamstring (Appendix L6), all descriptors of current injuries were insignificant. However, only one (1.0%) previous hamstring injury was reported. It occurred while bowling in a 60 over match, was mild in character, acute in nature, and limited the playing of cricket.

These previous hamstring injuries can not be compared to current hamstring injuries as none were reported (Appendix L6). This is contrary to past studies where it was found to be the most frequent injury (Orchard and James, 2002). There is a gap in the literature when it comes to describing cricket hamstring injuries to form of cricket, character, effect on playing cricket, and nature, although the majority of cricket injuries are acute in nature (Stretch, 2001, Orchard and James, 2002; Stretch and Orchard, 2003).

With reference to current injuries of the quadriceps (Appendix L7), all descriptors of current injuries were insignificant. However, one (1.0%) previous quadriceps injury was reported, which occurred during batting in a T20 over match, was mild in character, limited the playing of cricket and was acute in nature.

In contrast to current quadriceps injury (Section 4.2.1.1.3), which occurred during bowling and fielding in a 45 or 60 over match, previous quadriceps injuries occurred while batting in a T20 match. Yet, its severity, nature and effect on cricket, previous and current quadriceps injuries were similar.

With reference to current injuries of the hip / groin (Appendix L8), all descriptors of current injuries were insignificant. However, two (2.0%) previous hip / groin injuries were reported, with only one being stated as the worst injury. One occurred while batting and the other while fielding, in either a 45 or a 60 over match. One (1.0%) was mild and the other was moderate, with one preventing and the other limiting the playing of cricket. One was acute and the other was sub-acute in nature.

Orchard and James (2002) reported that the majority of groin injuries occur to fast bowlers and batsmen. The small sample in this study may not have been able to reflect these results. With respect to character, nature, and effect on playing cricket, no literature exists to contradict or support the findings.

When comparing these results to current hip / groin injuries, it was found that the majority of current hip / groin injuries occurred to bowlers, which follows the literature (Orchard and James, 2002). With respect to character, nature and effect on playing cricket, the current hip / groin injuries (Section 4.2.1.1.3) had similar findings.

Table 4.44: Association between previous injury descriptors and Lower Back injury										
		i. Lower back						Chi square	df	P
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Form of cricket?	N/A	0	.00%	80	79.21%	80	79.21%			
	T20	0	.00%	1	.99%	1	.99%	8.114	3	.044
	45	5	4.95%	0	.00%	5	4.95%			
	60	5	4.95%	9	8.91%	14	13.86%			
		0	.00%	1	.99%	1	.99%			
Severity?	N/A	0	.00%	80	79.21%	80	79.21%			
	Mild	0	.00%	4	3.96%	4	3.96%	7.425	2	.024
	Moderate	6	5.94%	6	5.94%	12	11.88%			
	Severe	4	3.96%	1	.99%	5	4.95%			

With reference to current injuries of the lower back, all descriptors of current injuries were insignificant (Appendix L9), except form of cricket and severity (Table 4.44). However, there were ten reported previous lower back injuries, six of which were rated by the players as their worst injuries. Eight occurred while bowling and two while batting, five occurred in a 45 over and similarly five in a 60 over match (Table 4.44). Six were reported as being moderate and four were reported as being severe in character, with six acute, three sub-acute and one chronic in nature. Two prevented the playing of cricket, seven limited play and one had no effect on playing cricket. Although T20 cricket caused no injuries, it was found to be statistically significant (p=.044) (Table 4.44). No injuries were reported as mild in severity, although it was found to be statistically significant (p=.024) (Table 4.44).

According to Orchard and James (2002) and Stretch and Orchard (2003), lower back injuries were the most prevalent injury to bowlers, which concurs with the results in this study. In terms of severity, nature and effect on playing cricket, no literature either supports or rejects the findings of this study.

When comparing previous lower back injuries to current lower back injuries (Section 4.2.1.2.3) the results were found to be very similar in all respects.

Table 4.45: Association between previous injury descriptors and Shoulder injury											
		m. Shoulder						Chi square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Severity?	N/A	0	.00%	94	93.07%	94	93.07%			
	Mild	3	2.97%	0	.00%	3	2.97%	4.958	2	.084
	Moderate	1	.99%	1	.99%	2	1.98%			
	Severe	0	.00%	2	1.98%	2	1.98%			

With reference to current injuries of the shoulder, all descriptors of current injuries were insignificant (Appendix L13), except severity (Table 4.45), which could have been statistically significant had the sample group been larger. However, four previous shoulder injuries were reported, none of the players reported it to be their worst injury. Of these, two occurred while bowling and two while fielding, with one occurring in a 45 over match and three during 60 over matches. Three were reported to be mild and one was reported as being moderate in severity, with all four being acute in nature, and three limiting and one having no effect on playing cricket.

The three mild shoulder injuries may have been found to be statistically significant (*p*=.084) if the sample of participants had been larger.

Orchard and James (2002) reported that bowling followed very closely by fielding activities were risk factors for shoulder injuries, which is exactly what was found in this study. With respect to form of cricket, severity, character and effect on playing cricket, there is no literature that distinguishes these for injury.

When comparing previous to current shoulder injuries (Section 4.2.1.1.3), it was found that the descriptors in both instances were either the same or similar in comparison.

With reference to current injuries of the elbow (Appendix L16), all descriptors of current injuries were insignificant. However, one previous elbow injury had been reported, which was noted as the players worst injury, which occurred during batting in a 45 over match, and was severe which also limited the playing of cricket, and was sub-acute in nature.

When comparing this to a past study, this finding compared favourably with past studies, where it was found that fast bowlers suffered with elbow injuries. Little or no information exists to compare the form of cricket, severity, effect on playing cricket, and nature of the injury. Although, from past studies, the majority of cricket injuries were found to be acute in nature (Stretch, 2001, Orchard and James, 2002; Stretch, 2003; Stretch and Orchard, 2003).

When comparing previous to current elbow injuries (Section 4.2.1.1.3), it was found that that it compared favourably to bowlers and to the longer format of the game, but did no correlate with severity, nature and effect on playing cricket.

With reference to current injuries of the hand / finger (Appendix L19), all descriptors of current injuries were insignificant. However, of the six previous hand / finger injuries reported, two were reported as their worst injury, with one occurring while bowling, two while batting, one while fielding and two while wicket-keeping. Of these, one occurred during a T20 match, two during a 45 over and three during a 60 over match. Four of these were reported as moderate and two as severe, with four acute and two sub-acute in nature. Two of these prevented, two limited and two had no effect on playing cricket.

Orchard and James (2002) point out that batsmen and bowlers suffered with the majority of hand / finger injuries, and that the majority of these injuries occurred while fielding and wicket-keeping. This is similar to the findings of this study. Similarly to past studies, the majority of cricket injuries were found to be acute in nature (Stretch, 2001, Orchard and James, 2002; Stretch, 2003; Stretch and Orchard, 2003).

When comparing to current hand / finger injuries (Section 4.2.1.1.3), previous hand / finger injuries were found to contrast in activity of cricket the injury occurred and effect on cricket. The rest were found to be similar in comparison.

4.2.2.2.4 Summary of previous injury

Of the previous injuries described as the worst injury sustained, the lower back with six was the most prevalent (Table 4.102), followed by the ankle (three) (Table 4.95), and two hand / finger (Table 4.105) and two knee (Table 4.98), which follows the trends found in current injury (Section 4.2.1.1.3), except for hand / finger which is similar to the outcomes in past studies (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Mansingh *et al*., 2006).

The form of cricket which accounted for most of the previous injuries were the 60 over matches with 22 injuries, 45 over matches with 19, and the least was T20 over matches with just five injuries. From this we can see that the longer the cricket matches, the more previous injuries were sustained. This followed the trends of the current injuries (Section 4.2.1.1.3) and past studies which found that the longer the form of cricket the higher the prevalence of injury (Stretch, 2001; Orchard and James, 2002; Stretch and Orchard, 2003; Mansingh *et al*., 2006). Forty five (45) and 60 over matches accounted five each for lower back injuries and three each for ankle injuries. Sixty (60) over matches accounted for four knee injuries, and three injuries each of the shoulder and hand / finger.

Of the previous injuries reported, the majority were moderate (20), followed by severe (14), and then mild (12). Current injuries (Section 4.2.1.1.3) were mostly moderate, then mild, followed by severe. There is no previous research to confirm or contradict these findings. The previous injuries that were most likely to be moderate-to-severe were injuries to the lower back, knee, hand / finger, ankle, and leg / calf. Previous injuries most likely to be mild were injuries to the shoulder, foot / toes, Achilles tendon, hamstring, quadriceps, and hip / groin.

Of the previous injuries reported, the majority (27) had limited effect on playing cricket. Thirteen prevented the playing of cricket, and six had no effect on the ability of playing cricket. The injuries that were related to the inability to play cricket were to the ankle, knee and lower back. Those that limited the ability to play cricket were to the lower back, knee, foot / toes, shoulder, hamstring and quadriceps. Previous injuries to the hand / finger were shared equally in preventing, limiting and having no effect on the ability to play cricket. These findings were similar to that of the current injuries (Section 4.2.1.1.3), but no literature exists highlighting the effect of the type of injury.

Thirty one previous injuries were considered acute, nine were sub-acute, and eight were chronic. Acute previous injuries accounted for the majority of the injuries. Of the acute injuries the majority were to the lower back, shoulder, hand / finger, ankle, foot / toes, Achilles tendon, hamstring, quadriceps. Injuries to the leg / calf and knee were half acute and half chronic. These are similar findings as that of current injuries (Section 4.2.1.1.3).

So, the majority of previous cricket injuries occur during 60 or 45 over matches, are moderate in severity and acute in nature, and have a limited effect on the ability to play cricket.

4.2.2.3 Management factors of previous injury

4.2.2.3.1 Practitioners consulted and rated by the cricketers (Q23 and Q24 of the CSIQ)

Table 4.46: Practitioners consulted (Q23)

Practitioners consulted[16]		Previous injury				Chi square	df	*p*
		No injury		Injury				
		Count	%	Count	%			
Homoeopath	Yes	0	.0%	2	2.0%	4.021	1	.045
	No	67	66.3%	32	31.7%			
Physiotherapist	Yes	22	21.8%	21	20.8%	7.720	1	.005
	No	45	44.6%	13	12.9%			

Out of a total of 101 cricketers:

- 20 indicated they had consulted a Biokineticist for an injury. Of which, six had a previous injury.
- 27 indicated they had consulted a Chiropractor for an injury. Of which, 12 had a previous injury.
- 17 indicated that they had consulted a General practitioner for an injury. Of which, six had a previous injury.
- Two indicated that they had a previous injury and had consulted a Homoeopath, which was found to be statistically significant (*p*=.045).
- Nine indicated they had consulted a Massage therapist for an injury. Of which, two had a previous injury.
- None (0) had seen a Neurologist for any injury.
- 12 indicated that they had consulted an Orthopaedic surgeon for an injury. Six, of which, had a previous injury.

[16] Of all the practitioners consulted, the Biokineticist, Chiropractor, General practioner, Massage therapist, Neurologist, Orthopaedic surgeon, and ‘other’ were not statistically significant, with the exception of the Honoeopath and Physiotherapist.

- 43 indicated that they had consulted a Physiotherapist for an injury. Of which, 21 had a previous injury. This was found to be statistically significant (p=.005).
- One cricketer had consulted an ‘Other’ (unspecified) practitioner for an injury.

From this it can be seen that the majority of previous cricket injuries had been seen by the Physiotherapist (21), followed by the Chiropractor (12), with the least being seen by the homoeopath (2) and Neurologist (0).

This is a very similar finding as that which was found for current cricket injuries, and this leads to the same recommendation as that put forward for current injuries above (Section 4.2.1.3.1).

With respect to the practitioners rated, none were statistically significant. However, the players strongly agreed and agreed to consult Physiotherapist (29), the Chiropractor (24) and the Biokineticist (21) for a previous injury.

Those practitioners rated ‘disagree’ and ‘strongly disagree’ to be consulted for a previous injury were the Homoeopath (32), the Neurologist (23) and the General practitioner (14).

The practitioners who rated ‘undecided’ were the General practitioner (13), the Orthopaedic surgeon (20) and the Massage therapist (12).

In conclusion, the most popular and most consulted practitioners for previous cricket injuries, are the Physiotherapist and Chiropractor. The least popular and consulted practitioners were the Neurologist and Homoeopath. The reasons for this are similar to those highlighted under current injuries (Section 4.2.1.3.1).

4.2.2.3.2 First aid and medical staff available

4.2.2.3.2.1 **First aid** (Q39 of the CSIQ)

First aid at matches and previous injuries was not significant at the 95% level. This means that the lack of first aid at matches was not a predictor of previous injury, which was found with current injuries as well (Section 4.2.1.3.2).

It is of interest to note that the Physiotherapist is the identified primary provider for the cricketers (field side / non-field side). In this context it would be assumed that Physiotherapists has some level of first aid training, but it would seem (as a result of the significant level of injuries in the context of perceived lack of first aid) that either the Physiotherapists have no first aid training or they are not perceived as first aid providers to the cricketers. This area requires further investigation as it is evident that the lack of perceived first aid is a significant contributor to injury.

4.2.2.3.2.2 **Medical staff** (Q40 of the CSIQ)

The association of medical staff at the matches and previous injury was not significant at the 95% level. This can be seen that with those with a previous injury 22 (85%) reported no medical staff available to them. This was also found to be the case and the recommendation follows that which was put forward above (Section 4.2.2.3.2.1).

4.2.2.3.3 Facilities

4.2.2.3.3.1 **State of the facilities available** (Q25 of the CSIQ)

Of all the facilities available compared to previous injury, all the facilities (cricket field, concrete cricket nets, indoor cricket nets, turf cricket nets, gym, pool and ‘other’) were not statistically significantly.

Of the facilities rated:

- The majority of the cricket fields were rated ‘Good’ to ‘Very good’ by 26 cricketers with previous injuries and 51 cricketers with no injury.
- Concrete cricket nets: the majority were rated ‘Poor-to-good’ by 27 with a previous injury and by 47 with no previous injury.
- Indoor cricket nets: 20 were rated ‘poor-to-very poor’ by six with previous injuries and 14 without; and 31 were rated ‘good-to-very good’ by cricketers with previous injury (ten) and those without (21).
- Turf cricket nets: their rating was 21 ‘average’ by six with previous injury and 15 without; 21 rated them ‘good-to-very good’ (six with previous injury and 15 without).
- Gym: 23 (eight with and 15 without previous injury) cricketers rated the gym ‘very poor’.
- Pool: 21 (7 with and 14 without previous injury) cricketers rated the pool ‘very poor’.
- ‘Other’: One cricketer with previous injury rated ‘other’ ‘good’.

The majority of cricket fields were rated highly, with only the turf cricket nets being rated ‘average’ or ‘very good’. Concrete and indoor cricket nets, as well as the gyms and pools were rated very poorly overall. This can only mean that a very large number of the cricketers did not have any access to a gym or pool or the facilities were not up to standard.

Comparing these ratings to current injuries (Section 4.2.1.3.3), similar results was found for cricket fields, turf cricket nets, gyms and pools. The concrete and indoor cricket nets had a better rating for current injuries than for previous injuries.

4.2.2.3.4 Equipment

4.2.2.3.4.1 **Equipment available at the clubs** (Q26 of the CSIQ)

Table 4.47: Equipment available								
Equipment available[17]		**Previous injury**				**Chi Square**	**df**	***P***
		No injury		**Injury**				
		Count	%	Count	%			
Batting equipment	Yes	16	16.0%	15	15.0%	4.811	1	.028
	No	51	51.0%	18	18.0%			
Bowling machine	Yes	19	19.0%	15	15.0%	2.880	1	.090
	No	48	48.0%	18	18.0%			

Of the equipment supplied to the cricketers by the clubs, 79 cricket balls were supplied the most, from which 29 players with a previous injury had received.

Next, bowling machine (34 – 15 with previous injury) and wicket-keeping (34 – 14 with previous injury) equipment was supplied the most. When it came to previous injury, the bowling machine (p=.090) could have been significant had the sample of participants been larger. Batting equipment (31 – 15 with previous injury) was found to be statistically significant (p=.028) when it came to previous injury (Table 4.47).

Other than the non-specified ‘other’ equipment, batting equipment was least readily available, whereas cricket balls were the most readily available.

This concurs with current injuries (Section 4.2.1.3.4.1) where cricket balls were also found to be the equipment that was supplied the most. This was followed by bowling, then wicket-keeping and then batting equipment.

[17] Of all the equipment available compared to previous injury, batting equipment was statistically significant, and the cricket balls, wicket-keeping equipment and ‘other’ were not, with the exception of the bowling machine, which could have been had the sample size been larger.

4.2.2.3.4.2 **Protective equipment supplied by the clubs** (Q27 and Q28 of the CSIQ)

Of all the protective equipment supplied by the clubs compared to previous injury, all (arm, chest and thigh guards; batting helmets and pads; box (groin); wicket-keeping gloves and pads; and ‘other’) were not statistically significantly.

Of the protective equipment supplied by the clubs to 100 cricketers:

- Seven (three with previous injury) cricketers benefited from the use of arm guards;
- Ten from batting helmets;
- Eight from batting pads;
- Seven from chest guards,
- Seven from box (groin);
- Nine from thigh guards;
- 11 from wicket-keeping gloves and pads; and
- Two from ‘other’ equipment.

Protective equipment that was the most readily supplied were the batting helmets and thigh guards, with the less readily supplied being the chest and arm guards and box (groin).

These results when compared to current cricket injuries were very similar. The supply of protective equipment was not found to be a predictor of previous injury in Premier League cricketers. This may be due to the reasons suggested (Section 4.2.1.3.4.1).

4.2.2.3.5 Coaching

4.2.2.3.5.1 **Coaches age** (Q29 and Q30 of the CSIQ)

Out of a total of 74 cricket players with a coach, only 27 (36.5%) suffered from a previous injury which was associated with a higher mean age of the coaches as compared to those who had no current injury. This would suggest that the older the coach the more likely a cricket player within their team is likely to be injured which contradicts the expectation that older coaches have greater experience which would mitigate against injury (Woolmer, Noakes and Moffett, 2008; Knowles, Marshall, Bowling, Loomis, Millikin, Yang and Mueller, 2009). However, it is also likely that younger coaches have greater levels of training as this is now a requirement within the sporting arena. In this study conclusive recommendations and further statistical analysis in order to evaluate these assertions were not possible due to the small sample size of coaches and therefore it is suggested that this area be further investigated. Furthermore, these results were expected after the analysis of current injury (Section 4.2.1.3.5.1) and concur with the findings of Stretch (2003) who indicated that previous injuries are significant predictors of current injury.

4.2.2.3.5.2(a) **Number of years coaching cricket** (Q31 and Q32 of the CSIQ)

There was no significant difference in mean number of years a coach has coached cricket between those with or without injury. Similarly it follows the trends as seen in current injuries (Section 4.2.1.3.5.2(a)).

4.2.2.3.5.2(b) **Number of years coaching Premier League cricket** (Q31 and Q32 of the CSIQ)

There was no significant difference in mean number of years a coach has coached premier league cricket between those with or without injury. Similarly it follows the trends as seen in current injuries (Section 4.2.1.3.5.2(b)).

4.2.2.3.5.3 Levels of cricket coached (Q35 of the CSIQ)

4.2.2.3.5.3.1 Primary school

There was no association between coaching primary school cricket players and previous injury.

4.2.2.3.5.3.2 High school

Similar to primary school cricket players there was no association between coaching high school cricket players and previous injury

4.2.2.3.5.3.3 Club level

This was a control question to insure that respondents were actually all coaches at the club level. So no intended statistics were to be drawn from this question.

4.2.2.3.5.3.4 Provincial level

There was no significant association between coaching provincial level cricket players and previous injury. However it is of interest to note that more injuries tended to occur with those coaches who had no provincial level experience which support the findings of Knowles *et al.* (2009).

4.2.2.3.5.3.5 National level

Table 4.48: Cross tabulation of the association between national level coached and previous injury

			Previous injury		Total
			No injury	Injury	
National level	No	Count	47	27	74
		% within National level	63.5%	36.5%	100.0%
Total		Count	47	27	74
		% within National level	63.5%	36.5%	100.0%

Table 4.49: Chi-square tests calculated for Table 4.48

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	74

a. No statistics are computed because National level is a constant.

It is of significance that none of the coaches had national level coaching experience as this may have resulted in a more homogenous group of coaches therefore resulting in very few analyses that would be statistically significant when using various levels of coaching (Section 4.2.2.3.5) as factors in regression analysis.

4.2.2.3.5.4 **Permanent coaches and coaching qualification(s)** (Q38, Q33 and Q34 of the CSIQ)

Table 4.50: Cross tabulation of the association between previous injury and coaching qualification(s)

Crosstab

		Previous injury				Total	
		No injury		Injury			
		Count	%	Count	%	Count	%
Do you have any form of coaching qualification(s)?	yes	44	**59.5%**	24	**32.4%**	**68**	**91.9%**
	no	4	**5.4%**	2	**2.7%**	**6**	**8.1%**
Total		**48**	**64.9%**	**26**	**35.1%**	**74**	**100.0%**

Table 4.51: Chi-square tests for Table 4.50

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	.009[b]	1	.923

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.11.

From Table 4.50, it can be seen that the majority of the cricketers and clubs had coaches with a coaching qualification(s) (68 / 74 = 91.9%), and only six (8.1%) did not have a qualification. Of those cricketers with a coach with qualification(s), 44 (64.7%) had no previous injury and 24 (35.3%) had a previous injury. Of those cricketers with a coach with no qualification, four (66.7%) had no previous injury and 2 (33.3%) had a previous injury. This may be due to the small sample of participants in this study, or to the greater demands that the coach may place on the cricketers to perform. More research into this area is needed to clarify this issue.

The association between coaching qualification and previous injury (Table 4.51) was not significant at the 95% level. A possible reason for it not being significant may be due to the small sample size.

Not withstanding the sample size it is assumed that coaches with coaching qualifications would result in a significantly lower injury rate (Shaw, Howat, Trainor and Maycock, 2004), based on their ability to regulate training schedules. Perhaps the statistical significance was not achieved because of the points highlighted in current injuries above (Section 4.2.1.3.5.4).

4.2.2.3.6 **Training completed** (Q36 and Q37 of the CSIQ)

4.2.2.3.6.1 Training

Table 4.52: T-Test for training and previous injury

Group Statistics

	Previous injury	N	Mean	Std. Deviation
Hours spent Batting training	No injury	67	1.78	1.485
	Injury	32	2.86	2.988
Hours spent Bowling training	No injury	66	2.02	2.069
	Injury	34	2.96	2.498
Hours spent Fielding training	No injury	64	1.13	1.300
	Injury	33	1.49	1.110

Table 4.53: Independent samples test for training and previous injury

Independent Samples Test

		t-test for Equality of Means		
		t	df	p
Hours spent Batting training	Equal variances assumed	-2.427	97	.017
Hours spent Bowling training	Equal variances assumed	-2.000	98	.048
Hours spent Fielding training	Equal variances assumed	-1.374	95	.173

The t-test results above (Table 4.53) indicates that there are statistically significant differences in the mean number of hours spent on batting and bowling training between those who sustained injuries previously and those who did not ($p<0.05$). The mean hours of training were greater for those with injuries.

The number hours spent training for batting (p=.017) and bowling (p=.048) were statistically significant (Table 4.53). This means that the prevalence of previous injuries correlates to the number of hours batting and bowling, specifically, the more hours spent on these disciplines led to more previous injuries. Fielding was not found to be significant. This is in contrast to current injuries (section 4.2.1.3.6.1) where there was no significance found between batting, bowling or fielding. This may mean that the current injuries may be re-injuries that occurred from these previous injuries due to weakness, or inadequate rehabilitation, or repetitive strain injury related to role specific functions (this would concur with Sections 4.2.1.2.2).

4.2.2.3.6.2 Pre-season training

No significant association was found between pre-season training and previous injury ($p>0.05$) and therefore may not be a risk factor for injury. This is the same outcome found with current injuries (Section 4.2.1.3.6.2).

Twenty seven (35.6%) of 77 cricketers that had performed pre-season training sustained a previous injury, this is in contrast to seven (29.2%) of 24 who had not. So, it seems that pre-season training may well be a risk factor for injury in the season, but this can only be confirmed or denied with a greater sample of cricketers. This concurs with the results in current injury (Section 4.2.1.3.6.2) where it was found that pre-season training is not a reliable predictor of current injury, but may assist with predisposing the cricketer to current injury. The effects of cross-training or cricketers participating in other sports between cricket seasons should be investigated as factors being protective or facilitative of injuries.

4.2.2.3.6.3 General fitness training (Q36.1 of the CSIQ)

The association between general fitness and previous injury is not significant at the 95 level. However, the majority (64 or 86.5%) of cricketers had done some form of general fitness. Those who had done general fitness sustained less previous injuries (34.4%), than those who had not trained for general fitness (40.0%). This was similar to the findings of current injuries (Section 4.2.1.3.6.3).

4.2.2.3.6.4 Endurance training (36.2 of the CSIQ)

The association between previous injury and endurance training was not statistically significant. However, the majority (86.5%) of cricketers were not involved in endurance training. Of these players, 23 (35.9%) had sustained a previous injury, whereas only 3 (30.0%) players who were involved in endurance training had sustained a previous injury. These trends were found to be similar to current injuries (Section 4.2.1.3.6.4).

4.2.2.3.6.5 **Speed training** (36.3 of the CSIQ)

Speed training was found not to be statistically significant. Therefore, with regards to speed training and previous injury, a slight majority (51.4%) had carried out some form of speed training, with 13 (34.3%) sustaining a previous injury. Those who had not done any speed training, 13 (36.1%) had sustained a previous injury, showing a very small difference existed between the two groups. This was in contrast to current injuries (Section 4.2.1.3.6.5) where it was found that six (16.7%) players who had sustained a current injury had not done any speed training, compared to 14 (36.8%) players who had. The association between previous injury and speed training is statistically insignificant.

These results seem to contrast with Stretch (2003). It is however possible that the age of the cricket players in this study (Section 4.2.2.1.2) may have influenced the outcome as using a previous injury as an indicator for current injuries is not applicable in a younger cohort where previous injuries may not have been incurred.

4.2.2.3.6.6 **Strength training** (Q36.4 of the CSIQ)

Table 4.54: Cross tabulation of the association between previous injury and strength training

Crosstab

		Previous injury				Total	
		No injury		Injury			
		Count	**%**	Count	**%**	Count	**%**
Strength training	yes	16	**21.6%**	5	**6.8%**	**21**	**28.4%**
	no	32	**43.2%**	21	**28.4%**	**53**	**71.6%**
Total		**48**	**64.9%**	**26**	**35.1%**	**74**	**100.0%**

Table 4.55: Chi-square tests for Table 4.54

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	1.650[b]	1	.199

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.38.

The association between previous injury and strength training was not statistically significant. However, the majority (28.4%) of cricketers had not performed any strength training. Of those who did, 5 (23.8%) sustained a previous injury, and of those who did not, 21 (39.6%) did sustain a previous injury. So, it seems there was a higher prevalence of injury among those who had not done any form of strength training. This is similar to the findings of current injuries (Section 4.2.1.3.6.6) and supports Stretch's (2003) findings.

4.2.2.3.6.7 **Skills training** (36.5 of the CSIQ)

The association between previous injury and skills training was not statistically significant. However, the majority (91.9%) of cricketers perform some sort of skills training and of those who did, only 24 (35.3%) sustained a previous injury. Those who were not involved in skills training, two (33.3%) sustained a previous injury. No difference seems to exist between performing or not performing skills training and the prevalence of previous injury. A similar finding was found with current injury (Section 4.2.1.3.6.7) and skills training, although the magnitude differed.

4.2.2.3.7 **Sponsorship** (Q43 and Q44 of the CSIQ)

Table 4.56: Cross tabulation of the association between previous injury and team sponsorship

Crosstab

		Previous injury				Total	
		No injury		Injury			
		Count	**%**	Count	**%**	Count	**%**
Does the team have a sponsor?	yes	37	**50.0%**	17	**23.0%**	**54**	**73.0%**
	no	11	**14.9%**	9	**12.2%**	**20**	**27.0%**
Total		**48**	**64.9%**	**26**	**35.1%**	**74**	**100.0%**

Table 4.57: Chi-square tests for Table 4.56

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	1.170[b]	1	.279

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.03.

The association between previous injury and sponsorship was not statistically significant. However, the majority (73.0%) of the cricketers had team sponsorship. Of these, 17 (31.5%) had a previous injury, and of those who did not, (45.0%) had a previous injury. The relationship between team sponsorship and previous injury seems to be significant at the 95% level. This was also found to be the case for current injuries (Section 4.2.1.3.6.7) in terms of which the effects of sponsorship on injury have already been discussed.

4.2.2.4 Binary logistic regression for previous injury

4.2.2.4.1 Logistic regression (previous injury) and selected injury questions

Table 4.58: Case processing summary (equipment)

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	92	91.1
	Missing Cases	9	8.9
	Total	101	100.0
Unselected Cases		0	.0
Total		101	100.0

a. If weight is in effect, see classification table for the total number of cases.

Table 4.59: Dependent variable encoding (equipment)

Dependent Variable Encoding

Original Value	Internal Value
No injury	0
Injury	1

Table 4.60: Variables in the equation (equipment)

		df	*p*	Exp(B)	95.0% C.I. for Exp(B)	
					Lower	Upper
Step 1[a]	Q9.1 Hours batting?	1	.285	1.333	.787	2.259
	Q9.2 Hours bowling?	1	.085	.593	.328	1.075
	Q9.3 Hours fielding?	1	.071	3.717	.893	15.468
	Q11 Hours of gym work per week?	1	.780	.956	.695	1.315
	Q12 Any pre-season training? (yes)	1	.515	2.092	.227	19.296
	Q15 Do you have any injuries? (yes)	1	.994	1.569E+019	.000	.
	Q25.1 Cricket field?	3	.304			
	Q25.1 (very poor)	1	.143	15.667	.395	621.418
	Q25.1 (poor)	1	.494	.424	.036	4.958
	Q25.1 (average)	1	.665	1.547	.215	11.149
	Q26.1 Batting equipment?	1	.893	1.174	.113	12.229
	Q26.2 Bowling machine?	1	.215	3.161	.513	19.458
	Q26.3 Cricket balls?	1	.112	17.599	.514	602.408
	Q26.4 Wicket-keeping equipment?	1	.913	.870	.072	10.563
	Q26.5 'Other'?	1	.996	102218622.570	.000	.
	Constant	1	.993	.000		

a. Variable(s) entered on step 1: Q9.1, Q9.2, Q9.3, Q11, Q12, Q15, Q25.1, Q26.1, Q26.2, Q26.3, Q26.4, and Q26.5.

The Table 4.60 reflects that the number of hours spent bowling and fielding are significant predictors of injury at the 90% level (p<0.10). Exp(B) indicates that a more hours of fielding training increases the odds of injury. This does not concur with the findings of current injuries (Section 4.2.1.4.1), where it was indicated that the cricket field was significantly associated with the reporting of current injuries. This would suggest that the mechanism of injury in current injuries is related to an environmental causative agent which could vary from club to club and that the previous injuries have a greater tendency to stem from repetitive activity from bowling and / or particular fielding positions.

Caution should however be applied in this context as cricket players may have mis-interpreted the categories of current and previous injuries reporting only acute injuries under the category of current even though they could have had a "niggling" lower back pain. Previous was thus identified as any prior injury acute in nature and occurring at some other point prior to the questionnaire being completed. This type of reporting would therefore not allow for the tracking of acute versus repetitive strain injuries with the exception of correlations such as found in Table 4.154. It is therefore suggested that future research consider re-wording or defining the exact criteria for current and previous injury. Additionally questions surrounding the concepts of acute / traumatic or chronic / repetitive strain injury are included and investigated.

4.2.2.4.2 Logistic regression (previous injury) and selected coaching parameters

Missing coach data was classified as ‘No coach” and all 101 cases were used. A forward stepwise method of variable selection was used, i.e. the first step included the constant only, and then variables were entered one at a time.

Table 4.61: Case processing summary

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	101	100.0
	Missing Cases	0	.0
	Total	101	100.0
Unselected Cases		0	.0
Total		101	100.0

a. If weight is in effect, see classification table for the total number of cases.

Table 4.62: Dependant variable codings

Dependent Variable Encoding

Original Value	Internal Value
No injury	0
Injury	1

Table 4.63: Variables in the Equation

	B	S.E.	Wald	df	*p*	Exp(B)
Step 0 Constant	-.678	.211	10.378	1	.001	.507

None of the predictors for previous injury are significant at the 95% level.

4.2.2.4.1 Logistic regression (previous injury) and selected training parameters

The tests were run but no significant results were found and therefore were omitted for brevity.

4.2.3 Binary logistic regression of non-injury variables

4.2.3.1 Associations between age and training

4.2.3.1.1 Association between age and pre-season training

Pre-season training when compared to age was found not to be statistically significant. However, 23.7% of the under-21 age group did not do any pre-season training. In the 21-25 age group, 20% did not do any pre-season training. In the over-26 age group, 28.6% did not do any pre-season training. This indicated that the older age group were the least likely to do any pre-season training.

When one compares this to current injury (Section 4.2.1.3.6.2), the trend was that of those who did not do pre-season training incurred more current injuries (41.7%), compared to those who did (27.3%). This would seem to suggest that the older age group (over-26) was more prone to reporting a current injury based on a lack of pre-season training. This concurs with Table 4.155, when comparing current injury to age. Where, it van be seen that 34.1% of the injuries were incurred by the under-21 age group, 40.1% by the 21-25 age group, and 25.0% by the over-26 age group. This therefore does not concur with the above argument which suggests older players who do little or no pre-season training is the most likely players for injury. Possible reasons for this could include the fact that this research did not explicitly define acute versus repetitive strain injuries in the context of current and previous injuries; additionally it must be considered that the presence of a ‘niggle’ from a repetitive strain injury may not have been reported as a current injury. Therefore, it is suggested that this area be further investigated to clarify the strength of the role of pre-season training, age and reporting of injury.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.2), the trend was that of those who did not train pre-season incurred less previous injuries (29.2%), compared to those who did (35.1%). This would seem to suggest that the older age group is less prone to reporting a previous injury based on the lack of pre-season training. This does not concur with Table 4.155; when comparing previous injury to age, as we see that 39.1% were incurred by the under-21 age group, 37.0% by the 21-25 age group, and 23.9% by the over-26 age group. This therefore concurs with the incongruency found with current injuries which suggests that the older players who do little or no pre-season training was the less likely candidates for injury (it stands to reasons that an older player is more likely to report a previous injury as compared to a younger player). Thus the reasons for the in-congruency may be similar to those presented in current injury, but to confirm, this further research is required.

4.2.3.1.2 Association between age and general fitness

General fitness training when compared to age was found not to be statistically significant. However, 13.3% of the under-21 age group did not perform any general fitness training. In the 21-25 age group 15.4% did not perform any general fitness training. Additionally 11.1% with respect to the over-26 age group did not perform any general fitness training. Thus, the older age group were the most likely to perform any general fitness training.

When this is compared to current injury (Section 4.2.1.3.6.3), the trend was that of those who did not do general fitness training incurred more current injuries (30.0%), compared to those who did (26.6%). This would seem to suggest that the older age group is less prone to reporting a current injury based on increased general fitness training. This does concur with Table 4.157, where current injury is compared to age. We see that 13.3% of the injuries were incurred by the under-21 age group, 15.4% by the 21-25 age group, and 11.7% by the over-26 age group.

This supports the above argument which suggests older players who perform general fitness training are the least likely candidates for injury. This concluding argument was similar to that under current injuries (Section 4.2.3.1.2).

Thus, when we compare this to previous injury (Section 4.2.2.3.6.3), the trend was that of those who did not perform any general fitness training incurred more previous injuries (40.0%), compared to those who did (34.4%). This would seem to suggest that the older age group is less prone to reporting a previous injury as a result of increased general fitness training. This does concur with Table 4.157; when comparing previous injury to age (Section 4.2.2.3.6.3), as we see that 13.3% were incurred by the under-21 age group, 15.4% by the 21-25 age group, and 11.7% by the over-26 age group. This therefore does support the above argument which suggests older players who perform general fitness training was the less likely candidates for injury, which is in contrast to the expected norm (it stands to reasons that an older player is more likely to report a previous injury as compared to a younger player).

4.2.3.1.3 Association between age and endurance training

Endurance training when compared to age was found not to be statistically significant. However, 76.7% (23 / 30) of the under-21 age group did not perform any endurance training. In the 21-25 age group, 92.3% (24 / 26) did not perform any endurance training. The result was 94.4% (17 / 18) with respect to the over-26 age group that did not perform any endurance training. Thus, the older age group were the least likely to perform endurance training.

When we compare this to current injury (Section 4.2.1.3.6.4), the trend was that of those who did not perform any endurance training incurred more current injuries (29.7%), compared to those who did (10.0%). This would seem to suggest that the older age group is more prone to reporting a current injury based on a lack of endurance training. This does concur when compared to current injury and age (Section 4.2.1.3.6.4). Where, it can be seen that 76.7% of the injuries were incurred by the under-21 age group, 92.3% by the 21-25 age group, and 94.4% by the over-26 age group. This concurs with the above argument which suggests older players who do little or no general fitness training is the most likely candidates for injury. The concluding argument was similar to the under current injuries (Section 4.2.3.1.1). Therefore it is suggested that this area be further investigated to clarify the strength of the role of endurance training, age and reporting of injury.

Thus, when we compare this to previous injury (Section 4.2.2.3.6.4), the trend was that of those who did not do endurance training incurred more previous injuries (35.9%), compared to those who did (30.0%). This would seem to suggest that the older age group is more prone to reporting a previous injury based on the lack of endurance training. This does concur with Table 4.159; when comparing previous injury to age (Section 4.2.2.3.6.4), as we see that 76.6% were incurred by the under-21 age group, 92.3% by the 21-25 age group, and 94.4% by the over-26 age group. This therefore does agree with the above argument which suggests older players who do little or no general fitness training was the less likely candidates for injury (it stands to reasons that an older player is more likely to report a previous injury as compared to a younger player). Thus the reasons for the congruency may be similar to those presented in current injury (Section 4.2.3.1.3), but to confirm this further research is required.

4.2.3.1.4 Association between age and speed training

Speed training when compared to age was found not to be statistically significant. However, 53.3% of the under-21 age group did not take part in any speed training. In the 21-25 age group, 38.5% did not do speed training. The result was 55.6% with respect to the over-26 age group that did not do speed training. Thus, the older age group were the least likely to do speed training (but by a small margin).

When one compares this to current injury (Section 4.2.1.3.6.5), the trend was that of those who did not do speed training incurred less current injuries (16.7%), compared to those who did (36.8%). This would seem to suggest that the older age group is less prone to reporting a current injury based on a lack of speed training. This concurs with Table 4.161, when comparing current injury to age (Section 4.2.1.3.6.5). Where, we see that 53.3% of the injuries were incurred by the under-21 age group, 38.5% by the 21-25 age group, and 55.6% by the over-26 age group. This therefore does agree with the above argument which suggests older players who do little or no speed training is the most likely candidates for injury. Possible reasons for this could include the fact that this research did not explicitly define acute versus repetitive strain injuries in the context of current and previous injuries; additionally it must be considered that the presence of a ‘niggle’ from a repetitive strain injury may not have been reported as a current injury. Therefore it is suggested that this area be further investigated to clarify the strength of the role of speed training, age and reporting of injury.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.5), the trend was that of those who did not do speed training incurred more previous injuries (36.1%), compared to those who did (34.2%). This would seem to suggest that the older age group is more prone to reporting a previous injury based on the lack of speed training. This does not concur with Table 4.161; when comparing previous injury to age (Section 4.2.2.3.6.5), as we see that 53.3% were incurred by the under-21 age group, 38.5% by the 21-25 age group, and 55.6% by the over-26 age group. This therefore does not concur with the incongruency found with current injuries which suggests that the older players who do little or no speed training was the more likely candidates for injury (it stands to reasons that an older player is more likely to report a previous injury as compared to a younger player). Thus the reasons for the incongruency may be similar to those presented in current injury, but to confirm this further research is required.

4.2.3.1.5 Association between age and strength training

Strength training when compared to age was found not to be statistically significant. However, 63.3% (19 / 30) of the under-21 age group did not do strength training. In the 21-25 age group 73.1% (19 / 26) did not do strength training. The result was 83.3% (15 / 18) with respect to the over-26 age group that did not do strength training. Thus, the older age group were the least likely to do strength training.

When one compares this to current injury (Section 4.2.1.3.6.6), the trend was that of those who did not do strength training incurred more current injuries (30.2%), compared to those who did (19.0%). This would seem to suggest that the older age group is more prone to reporting a current injury based on a lack of strength training. This agrees with previous injury when comparing current injury to age (Section 4.2.1.3.6.6). Where, we see that 63.3% of the injuries were incurred by the under-21 age group, 73.1% by the 21-25 age group, and 83.3% by the over-26 age group. This concurs with the above argument which suggests older players who do little or no strength training is the most likely candidates for injury. Possible reasons for this could include the fact that this research did not explicitly define acute versus repetitive strain injuries in the context of current and previous injuries; additionally it must be considered that the presence of a ‘niggle’ from a repetitive strain injury may not have been reported as a current injury. Therefore it is suggested that this area be further investigated to clarify the strength of the role of strength training, age and reporting of injury.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.6), the trend was that of those who did not do strength training incurred more previous injuries (39.6%), compared to those who did (23.8%). This would seem to suggest that the older age group is more prone to reporting a previous injury based on the lack of strength training. This does concur with Table 4.163; when comparing previous injury to age (Section 4.2.2.3.6.6), as we see that 63.3% were incurred by the under-21 age group, 73.1% by the 21-25 age group, and 83.3% by the over-26 age group. This therefore concurs with the argument found with current injuries which suggests that the older players who do little or no strength training was the more likely candidates for injury (it stands to reasons that an older player is more likely to report a previous injury as compared to a younger player). Thus the reasons for the congruency may be similar to those presented in current injury, but to confirm this further research is required.

4.2.3.1.6 Association between age and skills training

Skills training when compared to age was found not to be statistically significant. However, 3.3% of the under-21 age group did not do skills training. In the 21-25 age group 11.5% did not do skills training. In the over-26 age group 11.1% did not take part in any skills training. Thus, the 21-25 age group were the least likely to do skills training (by a small margin).

When this is compared to current injury (Section 4.2.1.3.6.7), the trend was that of those who did not do skills training incurred less current injuries (16.7%), compared to those who did (27.9%). This would seem to suggest that the older age group is less prone to reporting a current injury based on a lack of skills training. This concurs with previous injury when comparing current injury to age. Where, we see that 3.3% of the injuries were incurred by the under-21 age group, 11.5% by the 21-25 age group, and 11.1% by the over-26 age group. This therefore does not concur with the above argument which suggests older players (over-26) who do little or no skills training are the most likely candidates for injury. Possible reasons for this could include the fact that this research did not explicitly define acute versus repetitive strain injuries in the context of current and previous injuries; additionally it must be considered that the presence of a ‘niggle’ from a repetitive strain injury may not have been reported as a current injury. Therefore it is suggested that this area be further investigated to clarify the strength of the role of skills training, age and reporting of injury.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.7), the trend was that of those who did not do skills training incurred less previous injuries (33.3%), compared to those who did (35.3%). This would seem to suggest that the older age group is less prone to reporting a previous injury based on the lack of skills training. This does concur with Table 4.165; when comparing previous injury to age, as we see that 3.3% were incurred by the under-21 age group, 11.5% by the 21-25 age group, and 11.1% by the over-26 age group. This therefore concurs with the incongruency found with current injuries which suggests that the older players who do little or no skills training was the less likely candidates for injury (it stands to reasons that an older player is more likely to report a previous injury as compared to a younger player). Thus the reasons for the incongruency may be similar to those presented in current injury, but to confirm this further research is required.

4.2.3.2 Associations between ethnicity and training

4.2.3.2.1 Association between ethnicity and pre-season training

Table 4.64: Cross tabulation of the association between ethnicity and pre-season training

Crosstab

			Did you do any pre-season training for cricket?		
			Yes	No	**Total**
Ethnicity	Black	Count	5	6	**11**
		Total %	**5.0%**	**5.9%**	**10.9%**
	White	Count	45	14	**59**
		Total %	**44.6%**	**13.9%**	**58.4%**
	Asian	Count	3	0	**3**
		Total %	**3.0%**	**.0%**	**3.0%**
	Indian	Count	24	4	**28**
		Total %	**23.8%**	**4.0%**	**27.7%**
Total		Count	**77**	**24**	**101**
		Total %	**76.2%**	**23.8%**	**100.0%**

Table 4.65: Chi-square tests for Table 4.167

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	8.077[a]	3	.044

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is .71.

From Table 4.64, it can be seen that 54.5% of the Black players did not do pre-season training. Of the White players, 23.7% did not do pre-season training. Interestingly 0.0% of the Asian players did not do pre-season training. Fourteen point three percent (14.3%) of the Indian players did not take part in any pre-season training. Thus, the Black players were the least likely to do pre-season training.

In the context of current injury (Section 4.2.1.3.6.2), the trend was that of those who did not do pre-season training incurred more current injuries (41.7%), compared to those who did (27.3%). This would seem to suggest that the Black players would be more prone to reporting a current injury based on a lack of pre-season training. This concurs with Table 4.64, when comparing current injury to ethnicity. Where, it can be seen that 54.5% of the injuries were incurred by the Black players (statistically significantly higher), 23.7% by the White players, 0.0% by the Asian players, and 14.3% by the Indian players. This therefore does concur with the above argument which suggests Black players who do little or no pre-season training are the most likely candidates for injury. Due to the fact that the result in Section 4.2.1.1.3 seemed to indicate that lower limb injuries predominated in Black players. This result along with sporting facilities (Section 4.2.1.3.3) and sponsorship (Section 4.2.1.3.7) may have influenced these results. Therefore it is suggested that this area be further investigated to clarify the strength of the role of pre-season training, ethnicity and reporting of injury.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.2), the trend was that of those who did not do pre-season training incurred less previous injuries (29.2%), compared to those who did (35.1%). This would seem to suggest that the Black players would be less prone to reporting a previous injury based on the lack of pre-season training. This does not concur with Table 4.64; when comparing previous injury to ethnicity, as we see that 54.5% were incurred by the Black players, 23.7% by the White players, 0.0% by the Asian players, and 23.9% by the Indian. This therefore does not concur with the congruency found with current injuries, which suggests that the Black players who do little or no pre-season training is the less likely candidates for injury. Thus the reasons for the incongruency may be similar to those presented in current injury, but to confirm this further research is required.

4.2.3.2.2 Association between ethnicity and general fitness

Table 4.66: Cross tabulation of the association between ethnicity and general fitness

Crosstab

			General Fitness		
			No	Yes	**Total**
Ethnicity	Black	Count	0	2	**2**
		Total %	**.0%**	**2.7%**	**2.7%**
	White	Count	10	39	**49**
		Total %	**13.5%**	**52.7%**	**66.2%**
	Indian	Count	0	23	**23**
		Total %	**.0%**	**31.1%**	**31.1%**
Total		Count	**10**	**64**	**74**
		Total %	**13.5%**	**86.5%**	**100.0%**

Table 4.67: Chi-square tests for Table 4.66

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	5.899[a]	2	.052

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .27.

From Table 4.66, interestingly, it can be seen that zero (0%) of the Black and Indian players did not do general fitness training. Of the White players, 25.6% did not do general fitness training. Thus, the White players were the least likely to do general fitness training.

In the context of current injury (Section 4.2.1.3.6.3), the trend was that of those who did not do pre-season training incurred more current injuries (30.0%), compared to those who did (26.6%). This would seem to suggest that the White players would be more prone to reporting a current injury based on a lack of general fitness training. This concurs with Table 4.66, when comparing current injury to ethnicity (Section 4.2.1.1.3). Where, we see that 20.4% of the injuries were incurred by the White players, 0% by the Black and Indian players. This therefore does concur with the above argument which suggests White players who do little or no general fitness training is the most likely candidates for injury.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.3), the trend was that of those who did not do general fitness training incurred more previous injuries (40.0%), compared to those who did (34.4%). This would seem to suggest that the White players would be more prone to reporting a previous injury based on the lack of general fitness training. This concurs with Table 4.169; when comparing previous injury to ethnicity (Section 4.2.2.1.3), as we see that 25.6% were incurred by the White players, 0% by the Black and Indian players. This therefore does concur with the congruency found with current injuries, which suggests that the White players who do little or no general fitness training are the more likely candidates for injury.

4.2.3.2.3 Association between ethnicity and endurance training

Table 4.68: Cross tabulation of the association between ethnicity and endurance training

Crosstab

			Endurance Training		
			No	Yes	**Total**
Ethnicity	Black	Count	2	0	**2**
		Total %	**2.7%**	**.0%**	**2.7%**
	White	Count	45	4	**49**
		Total %	**60.8%**	**5.4%**	**66.2%**
	Indian	Count	17	6	**23**
		Total %	**23.0%**	**8.1%**	**31.1%**
Total		Count	**64**	**10**	**74**
		Total %	**86.5%**	**13.5%**	**100.0%**

Table 4.69: Chi-square tests for Table 4.68

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	4.624[a]	2	.099

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .27.

From Table 4.68, we can see that 100% of the Black players did not do endurance training. Of the White players, 91.8% did not do endurance training. The Indian players, 73.9% did not do endurance training. Thus, the Black players were the least likely to do endurance training.

In the context of current injury (Section 4.2.1.3.6.4), the trend was that of those who did not do endurance training incurred more current injuries (29.7%), compared to those who did (10.0%). This would seem to suggest that the Black players would be more prone to reporting a current injury based on a lack of endurance training. This concurs with Table 4.171, when comparing current injury to ethnicity (Section 4.2.1.1.3). Where, it van be seen that 100% of the injuries were incurred by the Black players, 91.8% by the White players, and 73.9% by the Indian players. This therefore does concur with the above argument which suggests Black players who do little or no endurance training is the most likely candidates for injury. Due to the fact that the result in Section 4.2.1.1.3 seemed to indicate that lower limb injuries predominated in Black players. This result along with sporting facilities (Section 4.2.1.3.3) and sponsorship (Section 4.2.1.3.7) may have influenced these results.

Thus, when this is compared to previous injury (Section 4.2.2.3.6.4), the trend was that of those who did not do endurance training incurred more previous injuries (35.9%), compared to those who did (30.0%). This would seem to suggest that the Black players would be more prone to reporting a previous injury based on the lack of endurance training. This does concur with Table 4.169; when comparing previous injury to ethnicity (Section 4.2.2.1.3), as we see that

100% were incurred by the Black players, 91.8% by the White players, and 73.9% by the Indian players. This therefore does concur with the congruency found with current injuries, which suggests that the Black players who do little or no endurance training is the more likely candidates for injury.

4.2.3.2.4 Association between ethnicity and speed training

Table 4.70: Cross tabulation of the association between ethnicity and speed training

Crosstab

			Speed training		
			No	Yes	**Total**
Ethnicity	Black	Count	2	0	**2**
		Total %	**2.7%**	**.0%**	**2.7%**
	White	Count	34	15	**49**
		Total %	**45.9%**	**20.3%**	**66.2%**
	Indian	Count	0	23	**23**
		Total %	**.0%**	**31.1%**	**31.1%**
Total		Count	**36**	**38**	**74**
		Total %	**48.6%**	**51.4%**	**100.0%**

Table 4.71: Chi-square tests for Table 4.70

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	32.337[a]	2	.000

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .97.

From Table 4.70, we can see that 100% of the Black players did not take part in speed training. Of the White players 69.4% did not take part in speed training. Indian players (100%) did take part in speed training. Thus, the Black players were the least likely to do speed training.

In the context of current injury (Section 4.2.1.3.6.5), the trend was that of those who did not do speed training incurred less current injuries (16.7%), compared to those who did (36.8%). This would seem to suggest that the Black players would be less prone to reporting a current injury based on a lack of speed training. This does not concur with Table 4.173, when comparing current injury to ethnicity (Section 4.2.1.1.3). Where, we see that 100% of the injuries were incurred by the Black players (statistically significantly higher), 69.4% by the White players. This therefore does not concur with the above argument which suggests Black players who do little or no speed training is the most likely candidates for injury. Therefore it is suggested that this area be further investigated to clarify the strength of the role of speed training, ethnicity and reporting of injury.

Thus, when this is compared to previous injury (Section 4.2.2.3.6.5), the trend was that of those who did not do speed training incurred more previous injuries (36.1%), compared to those who did (34.2%). This would seem to suggest that the Black players would be more prone to reporting a previous injury based on the lack of speed training. This does concur with Table 4.70; when comparing previous injury to ethnicity (Section 4.2.2.1.3), as it can be seen that 100% were incurred by the Black players, and 69.4% by the White players. This therefore does not concur with the incongruency found with current injuries, which suggests that the Black players who do little or no speed training is the less likely candidates for injury.

4.2.3.2.5 Association between ethnicity and strength training

Strength training when compared ethnicity was found not to be statistically significant. However, 100% of the Black players did not do strength training. Of the White players, 69.4% did not do strength training. The Indian players, 73.9% did not do any strength training. Thus, the Black players were the least likely to do strength training.

In the context of current injury (Section 4.2.1.3.6.6), the trend was that of those who did not do strength training incurred more current injuries (30.2%), compared to those who did (19.0%). This would seem to suggest that the Black players would be more prone to reporting a current injury based on a lack of strength training. This concurs with previous injury, when comparing current injury to ethnicity (Sections 4.2.1.1.3). Where, we see that 100% of the injuries were incurred by the Black players, 69.4% by the White players, and 73.9% by the Indian players. This therefore does concur with the above argument which suggests Black players who do little or no strength training is the most likely candidates for injury.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.6), the trend was that of those who did not do strength training incurred more previous injuries (39.6%), compared to those who did (23.8%). This would seem to suggest that the Black players would be more prone to reporting a previous injury based on the lack of strength training. This does concurs with Table 4.175; when comparing previous injury to ethnicity (Section 4.2.2.1.3), as we see that 100% were incurred by the Black players, 69.4% by the White players, and 73.9% by the Indian. This therefore does concur with the congruency found with current injuries, which suggests that the Black players who do little or no strength training is the more likely candidates for injury.

4.2.3.2.6 Association between ethnicity and skills training

Skills training when compared to ethnicity was found not to be statistically significant. However, 12.2% of the White players did not perform any skills training. In the Black and Indian players, 100% did take part in skills training. Thus, the Black and Indian players were the least likely to perform any skills training.

When this is compared to current injury (Section 4.2.1.3.6.7), the trend was that of those who did not do skills training incurred less current injuries (16.7%), compared to those who did (27.9%). This would seem to suggest that the Black and Indian players are less prone to reporting a current injury based on a lack of skills training. This does not concur with Table 4.177 or when comparing current injury to ethnicity (Section 4.2.1.1.3). Where, we see that 12.2% of the injuries were incurred by the White players, and 100% by the Black and Indian players. This therefore does not concur with the above argument which suggests Black and Indian players who do little or no pre-season training is the most likely candidates for injury. Due to the fact that the result in Section 4.2.1.1.3 seemed to indicate that lower limb injuries predominated in Black players. This result along with sporting facilities (Section 4.2.1.3.3) and sponsorship (Section 4.2.1.3.7) may have influenced these results. Therefore it is suggested that this area be further investigated to clarify the strength of the role of skills training, ethnicity and reporting of injury.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.7), the trend was that of those who did not do skills training incurred less previous injuries (33.3%), compared to those who did (35.3%). This would seem to suggest that the Black and Indian players are less prone to reporting a previous injury based on the lack of skills training. This does not concur when comparing previous injury to ethnicity (Section 4.2.2.1.3), as we see that 12.2% were incurred by the White players, and 100% by the Black and Indian players. This therefore concurs with the incongruency found with current injuries which suggests that the Black and Indian players who do little or no skills training was the less likely candidates for injury. Thus the reasons for the incongruency may be similar to those presented in current injury, but to confirm this further research is required.

4.2.3.2.7 Association between ethnicity and 'other'

Table 4.72: Cross tabulation of the association between ethnicity and 'other'

Crosstab

			Other	
			No	**Total**
Ethnicity	Black	Count	2	**2**
		Total %	**2.7%**	**2.7%**
	White	Count	49	**49**
		Total %	**66.2%**	**66.2%**
	Indian	Count	23	**23**
		Total %	**31.1%**	**31.1%**
Total		Count	**74**	**74**
		Total %	**100.0%**	**100.0%**

Due to one-sided responses, no comparison could be made.

4.2.3.3 Associations between club and training

It should be noted for the analyses of the sections that follow, that not all clubs had a coach and therefore, those did not have a coach, are not represented (refer to Section 4.1.4.2).

4.2.3.3.1 Association between club and pre-season training

Table 4.73: Cross tabulation of the association between club and pre-season training

Crosstab

			q2.12 Did you do any pre-season training for cricket?		
			Yes	No	**Total**
Club	African Warriors	Count	3	5	**8**
		Total %	**3.0%**	**5.0%**	**7.9%**
	Amanzimtoti	Count	5	6	**11**
		Total %	**5.0%**	**5.9%**	**10.9%**
	Berea Rovers	Count	7	4	**11**
		Total %	**6.9%**	**4.0%**	**10.9%**
	Chatsworth United	Count	5	3	**8**
		Total %	**5.0%**	**3.0%**	**7.9%**
	Collegians	Count	6	0	**6**
		Total %	**5.9%**	**.0%**	**5.9%**
	Crusaders	Count	8	1	**9**
		Total %	**7.9%**	**1.0%**	**8.9%**
	Dawnheights	Count	7	1	**8**
		Total %	**6.9%**	**1.0%**	**7.9%**
	Delta	Count	10	0	**10**
		Total %	**9.9%**	**.0%**	**9.9%**
	Pinetown	Count	11	0	**11**
		Total %	**10.9%**	**.0%**	**10.9%**
	Tertiary	Count	6	4	**10**
		Total %	**5.9%**	**4.0%**	**9.9%**
	Topham	Count	9	0	**9**
		Total %	**8.9%**	**.0%**	**8.9%**
Total		Count	**77**	**24**	**101**
		Total %	**76.2%**	**23.8%**	**100.0%**

Table 4.74: Chi-square tests for Table 4.74

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	28.210[a]	10	.002

a. 12 cells (54.5%) have expected count less than 5. The minimum expected count is 1.43.

From Table 4.73, it can be seen that 62.5% of the African Warriors players did not do pre-season training. Of the Amanzimtoti players, 54.5% did not do pre-season training. The Tertiary players, 40.0% did not do any pre-season training. Of the Chatsworth United players, 37.5% did not do pre-season training. Of the Berea Rovers players, 36.4% did not do pre-season training. Dawnheights (12.5%) and Crusaders (11.1%), did not do pre-season training. Interestingly 100% of the Collegians, Delta, Pinetown and Topham players did do pre-season training. Thus, the Collegians, Delta, Pinetown and Topham players were the most likely to do pre-season training.

In the context of current injury (Section 4.2.1.3.6.2), the trend was that of those who did not do pre-season training incurred more current injuries (41.7%), compared to those who did (27.3%). This would seem to suggest that the Collegians, Delta, Pinetown and Topham players would be more prone to reporting a current injury based on a lack of pre-season training. This concurs with Table 4.180, when comparing current injury to club (Section 4.2.1.2.1). Where, we see that 62.5% of the injuries were incurred by the Collegians, Delta, Pinetown and Topham players (statistically significantly higher), Amanzimtoti players 54.5%, 62.5% of the African warriors, 40.0% of the Tertiary players, 37.5% of the Chatsworth United players, 36.4% of the Berea Rovers players, 12.5% of the Dawnheights players, and 11.1% of the Crusaders players. This therefore does concur with the above argument which suggests Collegians, Delta, Pinetown and Topham players who do little or no pre-season training is the most likely candidates for injury. From Table 4.7, we see that the trend holds true for Collegians and Delta, who feature in the lower bracket of current injury presentation. The trend does not hold true for Pinetown and Topham, who features in the middle or high bracket, respectively, of current injury. Further research is needed.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.2), the trend was that of those who did not do pre-season training incurred less previous injuries (29.2%), compared to those who did (35.1%). This would seem to suggest that the Collegians, Delta, Pinetown and Topham players would be more prone to reporting a previous injury based on the lack of pre-season training. This does not concur with Table 4.180; when comparing previous injury to club (Section 4.2.2.2.1), it can be seen that 62.5% of the injuries were incurred by the Collegians, Delta, Pinetown and Topham players (statistically significantly higher), 62.5% of African warriors players, Amanzimtoti players 54.5%, 40.0% of the Tertiary players, 37.5% of the Chatsworth United players, 36.4% of the Berea Rovers players, 12.5% of the Dawnheights players, and 11.1% of the Crusaders players. This therefore does not concur with the congruency found with current injuries, which suggests that the Collegians, Delta, Pinetown and Topham players who do little or no pre-season training is the less likely candidates for injury. Thus the reasons for the incongruency may be similar to those presented in current injury, but to confirm this further research is required. From Table 4.86, we see that the trend holds true for Collegians and Delta, who features in the lower bracket of previous injury presentation. It does not hold true for Pinetown and Topham, who fall in the high or middle bracket, respectively, for previous injury. Reasons for this need to be studied further.

4.2.3.3.2 Association between club and general fitness

The association between club and general fitness training is significant at the 95% level but the cell sizes are small.

Table 4.75: cross tabulation of the association between club and general fitness

Crosstab

			q36.1 General fitness		
			No	Yes	**Total**
Club	Berea Rovers	Count	0	11	**11**
		Total %	**.0%**	**14.9%**	**14.9%**
	Chatsworth United	Count	0	8	**8**
		Total %	**.0%**	**10.8%**	**10.8%**
	Collegians	Count	0	6	**6**
		Total %	**.0%**	**8.1%**	**8.1%**
	Crusaders	Count	0	9	**9**
		Total %	**.0%**	**12.2%**	**12.2%**
	Delta	Count	0	10	**10**
		Total %	**.0%**	**13.5%**	**13.5%**
	Pinetown	Count	0	11	**11**
		Total %	**.0%**	**14.9%**	**14.9%**
	Tertiary	Count	10	0	**10**
		Total %	**13.5%**	**.0%**	**13.5%**
	Topham	Count	0	9	**9**
		Total %	**.0%**	**12.2%**	**12.2%**
Total		Count	**10**	**64**	**74**
		Total %	**13.5%**	**86.5%**	**100.0%**

Table 4.76: Chi-square tests for Table 4.75

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	74.000[a]	7	.000

a. 8 cells (50.0%) have expected count less than 5. The minimum expected count is .81.

From Table 4.75, it can be seen that 0% of the Berea Rovers, Chatsworth United, Collegians, Crusaders, Delta, Pinetown and Topham players did not take part in general fitness training. Of the Tertiary players, 100% did not perform general fitness training. Thus, the Tertiary players were the most likely not to perform general fitness training.

In the context of current injury (Section 4.2.1.3.6.3), the trend was that of those who did not do skills training incurred more current injuries (30.0%), compared to those who did (26.6%). This would seem to suggest that the Tertiary players would be more prone to reporting a current injury based on a lack of general fitness training. This agrees with Table 4.182, when comparing current injury to club (Section 4.2.1.2.1). Where, we see that 0% of the injuries were incurred by the Berea Rovers, Chatsworth United, Collegians, Crusaders, Delta, Pinetown and Topham players (statistically significantly higher), and Tertiary players incurred 100%. This therefore agrees with the above argument which suggests Tertiary players who do little or no general fitness training is the most likely candidates for injury. From Table 4.8, we see that the trend holds true for Tertiary, who features in the lower bracket of current injury presentation.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.3), the trend was that of those who did not do general fitness training incurred more previous injuries (40.0%), compared to those who did (34.4%). This would seem to suggest that the Tertiary players would be more prone to reporting a previous injury based on the lack of general fitness training. This concurs with Table 4.182; when comparing previous injury to club (Section 4.2.2.2.1), as we see that 0% of the injuries were incurred by the Berea Rovers, Chatsworth United, Collegians, Crusaders, Delta, Pinetown and Topham players (statistically significantly higher), and 100% of Tertiary players. This therefore concurs with the congruency found with current injuries, which suggests that the Tertiary players who do little or no skills training are the less likely candidates for injury. From Table 4.86, we see that the trend does not hold true for Tertiary, who features in the middle bracket of previous injury presentation. Reasons for this need to be studied further.

4.2.3.3.3 Association between club and endurance training

The association between club and endurance training is significant at the 95% level but the cell sizes are small.

Table 4.77: Cross tabulation of the association between club and endurance training

Crosstab

			q36.2 Endurance training		
			No	Yes	**Total**
Club	Berea Rovers	Count	11	0	**11**
		Total %	**14.9%**	**.0%**	**14.9%**
	Chatsworth United	Count	8	0	**8**
		Total %	**10.8%**	**.0%**	**10.8%**
	Collegians	Count	6	0	**6**
		Total %	**8.1%**	**.0%**	**8.1%**
	Crusaders	Count	9	0	**9**
		Total %	**12.2%**	**.0%**	**12.2%**
	Delta	Count	0	10	**10**
		Total %	**.0%**	**13.5%**	**13.5%**
	Pinetown	Count	11	0	**11**
		Total %	**14.9%**	**.0%**	**14.9%**
	Tertiary	Count	10	0	**10**
		Total %	**13.5%**	**.0%**	**13.5%**
	Topham	Count	9	0	**9**
		Total %	**12.2%**	**.0%**	**12.2%**
Total		Count	**64**	**10**	**74**
		Total %	**86.5%**	**13.5%**	**100.0%**

Table 4.78: Chi-square tests for Table 4.77

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	74.000[a]	7	.000

a. 8 cells (50.0%) have expected count less than 5. The minimum expected count is .81.

From Table 4.77, we can see that 100% of the Berea Rovers, Chatsworth United, Collegians, and Crusaders, Pinetown, Tertiary and Topham players did not perform any endurance training. Of the Delta players, 0% did not perform any endurance training. Thus, the Delta players were the most likely to do endurance training.

In the context of current injury (Section 4.2.1.3.6.4), the trend was that of those who did not do endurance training incurred more current injuries (29.7%), compared to those who did (10.0%). This would seem to suggest that the Berea Rovers, Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players would be more prone to reporting a current injury based on a lack of endurance training. This concurs with Table 4.185, when comparing current injury to club (Section 4.2.1.2.1). Where, it can be seen that 100% of the injuries were incurred by the Berea Rovers, Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players (statistically significantly higher), and Delta players 0%. This therefore does concur with the above argument which suggests Berea Rovers, Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players who do little or no pre-season training is the most likely candidates for injury. From Table 4.8, we see that the trend holds true for Delta, who features in the lower bracket of current injury presentation.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.4), the trend was that of those who did not do endurance training incurred more previous injuries (35.9%), compared to those who did (30.0%). This would seem to suggest that the Berea Rovers, Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players would be more prone to reporting a previous injury based on the lack of endurance training. This concurs with Table 4.77; when comparing previous injury to club (Section 4.2.2.2.1), as it can be seen that 100% of the injuries were incurred by the Berea Rovers, Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players (statistically significantly higher), and 0% of Delta players. This therefore does concur with the congruency found with current injuries, which suggests that the Berea Rovers, Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players who do little or no endurance training are the more likely candidates for injury. From Table 4.86, we see that the trend does not hold true for Delta, who features in the middle bracket of previous injury presentation. Reasons for this need to be studied further.

4.2.3.3.4 Association between club and speed training

The association between club and speed training is significant at the 95% level but the cell sizes are small.

Table 4.79: Cross tabulation of the association between club and speed training

Crosstab

			q36.3 Speed training		
			No	Yes	**Total**
Club	Berea Rovers	Count	0	11	**11**
		Total %	**.0%**	**14.9%**	**14.9%**
	Chatsworth United	Count	0	8	**8**
		Total %	**.0%**	**10.8%**	**10.8%**
	Collegians	Count	6	0	**6**
		Total %	**8.1%**	**.0%**	**8.1%**
	Crusaders	Count	9	0	**9**
		Total %	**12.2%**	**.0%**	**12.2%**
	Delta	Count	0	10	**10**
		Total %	**.0%**	**13.5%**	**13.5%**
	Pinetown	Count	11	0	**11**
		Total %	**14.9%**	**.0%**	**14.9%**
	Tertiary	Count	10	0	**10**
		Total %	**13.5%**	**.0%**	**13.5%**
	Topham	Count	0	9	**9**
		Total %	**.0%**	**12.2%**	**12.2%**
Total		Count	**36**	**38**	**74**
		Total %	**48.6%**	**51.4%**	**100.0%**

Table 4.80: Chi-square tests for Table 4.79

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	74.000[a]	7	.000

a. 10 cells (62.5%) have expected count less than 5. The minimum expected count is 2.92.

From Table 4.79, we can see that 100% of the Berea Rovers, Chatsworth United, Delta and Topham players did not perform any speed training. The Collegians, Crusaders, Pinetown and Tertiary players, 0% did not perform any speed training. Thus, the Collegians, Crusaders, Pinetown and Tertiary players were the most likely to do speed training.

In the context of current injury (Section 4.2.1.3.6.5), the trend was that of those who did not do speed training incurred less current injuries (16.7%), compared to those who did (36.8%). This would seem to suggest that the Collegians, Crusaders, Pinetown and Tertiary players would be more prone to reporting a current injury based on an increase of speed training. This does not concur with Table 4.79, when comparing current injury to club (Section 4.2.1.2.1). Where, it can be seen that 100% of the injuries were incurred by the Berea Rovers, Chatsworth United, Delta and Topham players (statistically significantly higher), and 0% by Collegians, Crusaders, Pinetown and Tertiary. This therefore does not concur with the above argument which suggests Collegians, Crusaders, Pinetown and Tertiary players who do an excess of speed training are the least likely candidates for injury. From Table 4.7, it can be seen that the trend holds true for Collegians, Crusaders, Pinetown and Tertiary, who features in the lower bracket of current injury presentation.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.2), the trend was that of those who did not do speed training incurred more previous injuries (36.1%), compared to those who did (34.2%). This would seem to suggest that the Collegians, Crusaders, Pinetown and Tertiary players would be less prone to reporting a previous injury based on the excess of speed training. This does concur with Table 4.79; when comparing previous injury to club (Section 4.2.2.2.1), as we see that 100% of the injuries were incurred by the Berea Rovers, Chatsworth United, Delta and Topham players (statistically significantly higher), and 0% by the Collegians, Crusaders, Pinetown and Tertiary. This therefore does not concur with the incongruency found with current injuries, which suggests that the Collegians, Crusaders, Pinetown and Tertiary players who perform an excess of speed training are the more likely candidates for injury.

Thus the reasons for the incongruency may be similar to those presented in current injury, but to confirm this further research is required. From Table 4.86, we see that the trend does not hold true for Pinetown and Tertiary, who features in the Middle bracket of previous injury presentation. Reasons for this need to be studied further. The trend does hold true for Collegians and Crusaders.

4.2.3.3.5 Association between club and strength training

The association between club and strength training is significant at the 95% level but the cell sizes are small.

Table 4.81: Cross tabulation of the association between club and strength training

Crosstab

			q36.4 Strength training		
			No	Yes	**Total**
Club	Berea Rovers	Count	0	11	**11**
		Total %	**.0%**	**14.9%**	**14.9%**
	Chatsw orth United	Count	8	0	**8**
		Total %	**10.8%**	**.0%**	**10.8%**
	Collegians	Count	6	0	**6**
		Total %	**8.1%**	**.0%**	**8.1%**
	Crusaders	Count	9	0	**9**
		Total %	**12.2%**	**.0%**	**12.2%**
	Delta	Count	0	10	**10**
		Total %	**.0%**	**13.5%**	**13.5%**
	Pinetow n	Count	11	0	**11**
		Total %	**14.9%**	**.0%**	**14.9%**
	Tertiary	Count	10	0	**10**
		Total %	**13.5%**	**.0%**	**13.5%**
	Topham	Count	9	0	**9**
		Total %	**12.2%**	**.0%**	**12.2%**
Total		Count	**53**	**21**	**74**
		Total %	**71.6%**	**28.4%**	**100.0%**

Table 4.82: Chi-square tests for Table 4.81

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	74.000[a]	7	.000

a. 9 cells (56.3%) have expected count less than 5. The minimum expected count is 1.70.

From Table 4.81, it can be seen that 0% of the Berea Rovers and Delta players did not perform any strength training. Of the Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players, 100% did not perform any strength training. Thus, the Berea Rovers and Delta players were the most likely to perform strength training.

In the context of current injury (Section 4.2.1.3.6.6), the trend was that of those who did not do strength training incurred more current injuries (30.2%), compared to those who did (19.0%). This would seem to suggest that the Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players would be more prone to reporting a current injury based on a lack of strength training. This concurs with Table 4.81, when comparing current injury to club (Section 4.2.1.2.1). Where, we see that 0% of the injuries were incurred by the Berea Rovers and Delta players (statistically significantly higher), and 100% by the Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players. This therefore does concur with the above argument which suggests Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players who do little or no strength training is the most likely candidates for injury. From Table 4.7, we see that the trend holds true for Delta, who features in the lower bracket of current injury presentation, does not hold true for Berea Rovers, who features in the middle bracket of injury presentation. Further research is needed in this area.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.6), the trend was that of those who did not do strength training incurred more previous injuries

(39.6%), compared to those who did (23.8%). This would seem to suggest that the Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players would be more prone to reporting a previous injury based on the lack of strength training. This concurs with Table 4.189; when comparing previous injury to club (Section 4.2.2.2.1), as we see that 0% of the injuries were incurred by the Berea Rovers and Delta players (statistically significantly higher), and 100% of Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players. This therefore concur with the congruency found with current injuries, which suggests that the Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham players who do little or no strength training are the more likely candidates for injury. From Table 4.83, we see that the trend does not hold true for Delta, who features in the Middle bracket of previous injury presentation. Reasons for this need to be studied further. The trend does hold true for Berea Rovers, who feature in the lower bracket of injury presentation.

4.2.3.3.6 Association between club and skills training

The association between club and skills training is significant at the 95% level but the cell sizes are small.

Table 4.83: Cross tabulation of the association between club and skills training

Crosstab

			q36.5 Skills training		
			No	Yes	**Total**
Club	Berea Rovers	Count	0	11	**11**
		Total %	**.0%**	**14.9%**	**14.9%**
	Chatsworth United	Count	0	8	**8**
		Total %	**.0%**	**10.8%**	**10.8%**
	Collegians	Count	6	0	**6**
		Total %	**8.1%**	**.0%**	**8.1%**
	Crusaders	Count	0	9	**9**
		Total %	**.0%**	**12.2%**	**12.2%**
	Delta	Count	0	10	**10**
		Total %	**.0%**	**13.5%**	**13.5%**
	Pinetown	Count	0	11	**11**
		Total %	**.0%**	**14.9%**	**14.9%**
	Tertiary	Count	0	10	**10**
		Total %	**.0%**	**13.5%**	**13.5%**
	Topham	Count	0	9	**9**
		Total %	**.0%**	**12.2%**	**12.2%**
Total		Count	**6**	**68**	**74**
		Total %	**8.1%**	**91.9%**	**100.0%**

Table 4.84: Chi-square tests for Table 4.83

Chi-Square Tests

	Value	df	*p*
Pearson Chi-Square	74.000[a]	7	.000

a. 8 cells (50.0%) have expected count less than 5. The minimum expected count is .49.

From Table 4.83, it can be seen that 100% of the Berea Rovers, Chatsworth United, Crusaders, Delta, Pinetown, Tertiary and Topham players did not take part in any skills training. Of the Collegians players, 0% did not take part in any skills training. Thus, the Collegians players were the most likely to perform skills training.

In the context of current injury (Section 4.2.1.3.6.7), the trend was that of those who did not do skills training incurred less current injuries (16.7%), compared to those who did (27.9%). This would seem to suggest that the Berea Rovers, Chatsworth United, Crusaders, Delta, Pinetown, Tertiary and Topham players would be less prone to reporting a current injury based on a lack of skills training. This does not concur with Table 4.83, when comparing current injury to club (Section 4.2.1.2.1), where, we see that 100% of the injuries were incurred by the Berea Rovers, Chatsworth United, Crusaders, Delta, Pinetown, Tertiary and Topham players (statistically significantly higher), and 0% by the Collegians players. This therefore does not concur with the above argument which suggests Berea Rovers, Chatsworth United, Crusaders, Delta, Pinetown, Tertiary and Topham players who do little or no skills training are the most likely candidates for injury. From Table 4.7, we see that the trend holds true for Collegians, who features in the lower bracket of current injury presentation.

Thus, when one compares this to previous injury (Section 4.2.2.3.6.2), the trend was that of those who did not do skills training incurred less previous injuries (33.3%), compared to those who did (35.3%). This would seem to suggest that the Berea Rovers, Chatsworth United, Crusaders, Delta, Pinetown, Tertiary and Topham players would be less prone to reporting a previous injury based on the lack of skills training. This does not concur with Table 4.83; when comparing previous injury to club (Section 4.2.2.2.1), as we see that 100% of the injuries were incurred by the Berea Rovers, Chatsworth United, Crusaders, Delta, Pinetown, Tertiary and Topham players (statistically significantly higher), and 0% by the Collegians players. This therefore does concur with the incongruency found with current injuries, which suggests that the Berea Rovers, Chatsworth United, Crusaders, Delta, Pinetown, Tertiary and Topham players who do little or no skills training are the less likely candidates for injury. Thus the reasons for the incongruency may be similar to those presented in current injury, but to confirm this further research is required. From Table 4.83, we see that the trend does not hold true for Collegians, who features in the Middle bracket of previous injury presentation. Reasons for this need to be studied further.

4.3 Revisiting the objectives of this study

4.3.1 Current injury

4.3.1.1 To determine the prevalence of injuries in cricket players in the Greater Durban area.

4.3.1.1.1 Hypothesis 1

It could be hypothesized that injuries are not common in cricket players in the greater Durban area.

In terms of prevalence of injury, this hypothesis is ***accepted*** (Section 4.2.1.1.1) if the comparison is made to the literature. In terms of the prevalence of the injury, this hypothesis is ***accepted*** for lower limb, upper limb, and back and trunk.

In terms of types of injury, the injury trends were the same, this hypothesis is ***rejected*** for lower back, shoulder, ankle, leg / calf, quadriceps, and elbow injuries (Sections 4.2.1.1.1):

In terms of the injury, the injury trends were the same for lower limb, upper limb, and back and trunk; therefore the hypothesis is ***rejected*** for these body regions injured.

In terms of types of injury, the injury trends were the same, this hypothesis is ***accepted*** for Foot / Toes, knee, hip groin, hand / finger, and 'other' injuries (Sections 4.2.1.1.1).

4.3.1.1.2 Hypothesis 2

It could be hypothesized that there are no specific injuries to the player's position/role in the cricket team (e.g. type of bowler, batsman, fielder and/or all rounder).

In terms of injuries to roles performed in the cricket team, the hypothesis is rejected for ankle and Hip / Groin injuries to fast/medium bowlers (Table 4.9), knee injuries to slow/spin bowlers (Table 4.10), and quadriceps to fielders (Table 4.13)

In terms of injuries to roles performed in the cricket team, the hypothesis is accepted for all other injuries reported in fast/medium bowlers (Table 4.9), in slow/spin bowlers (Table 4.10), in top order (1-3) batsmen (Section 4.2.1.2.2), in middle order (4-6) batsmen (Table 4.11), in wicket-keepers (Table 4.12), and in fielders (Table 4.13).

4.3.1.2 To determine the risk factors leading to cricket injuries in the greater Durban area.

4.3.1.2.1 Hypothesis 3

It could be hypothesized that there are no predisposing risk factors linked to cricket injuries.

In terms of the age of the cricketer, the hypothesis was accepted for all injuries (Table 4.2).

In terms of the ethnicity of the cricketer, the hypothesis was rejected for lower back injuries, and accepted for all other injuries (Table 4.4).

In terms of the weight and height (BMI), the hypothesis was accepted for all the injuries (Section 4.2.1.1.4).

In terms of medical aid, the hypothesis was accepted for all injuries (Tables 4.5 and 4.6).

In terms of the clubs that the cricketer belonged to, the hypothesis was accepted for all injuries (Table 4.7).

In terms of the role of the fast / medium bowler, the hypothesis was rejected for ankle and hip / groin injuries, and accepted for all other injuries (Table 4.9).

In terms of the role of the slow / spin bowler, the hypothesis was accepted for all the injuries (Table 4.10).

In terms of the role of the top order (1-3) batsman, the hypothesis was accepted for all the injuries (Section 4.2.1.2.2).

In terms of the role of the middle order (4-6) batsman, the hypothesis was accepted for all injuries (Table 4.11).

In terms of the role of the wicket-keeper, the hypothesis was rejected for knee injuries, and accepted for all other injuries (Table 4.12).

In terms of the role of the fielder, the hypothesis was rejected for quadriceps injury, and accepted for all other injuries (Table 4.13).

In terms of foot / toes injury, the hypothesis was accepted for all the descriptors of current injury (Section 4.2.1.2.3).

In terms of ankle injury, the hypothesis was accepted for all the descriptors of current injury (Table 4.14).

In terms of leg / calf injury, the hypothesis was accepted for all the descriptors of current injury (Section 4.2.1.2.3).

In terms of knee injury, the hypothesis was accepted for all the descriptors of current injury (Section 4.2.1.2.3).

In terms of quadriceps injury, the hypothesis was accepted for all the descriptors of current injury (Section 4.2.1.2.3).

In terms of hip / groin injury, the hypothesis was accepted for all the descriptors of current injury (Section 4.2.1.2.3).

In terms of lower back injury, the hypothesis was accepted for all the descriptors of current injury (Section 4.2.1.2.3).

In terms of shoulder injury, the hypothesis was rejected for severity and accepted for all the other descriptors of current injury (Table 4.15)

In terms of elbow injury, the hypothesis was accepted for all the descriptors of current injury (Section 4.2.1.2.3).

In terms of hand / finger injury, the hypothesis was accepted for all the descriptors of current injury (Section 4.2.1.2.3).

In terms of 'other' injury, the hypothesis was accepted for all the descriptors of current injury (Section 4.2.1.2.3).

4.3.1.3 To determine the management strategies of cricket injuries in the greater Durban area.

4.3.1.3.1 Hypothesis 4

It could be hypothesized that there are no incorrect or inadequate management strategies that may be linked to the occurrence of cricket injuries.

In terms of practitioners consulted for current injuries, the hypothesis was rejected for Homoeopath and accepted for all the other practitioners (Table 4.16).

In terms of practitioners rated for current injuries, the hypothesis was accepted for all the practitioners (Section 4.2.1.3.1).

In terms of first aid at all the matches, the hypothesis was rejected (Tables 4.17 and 4.18).

In terms of medical staff involved with the team, the hypothesis was rejected (Tables 4.19 and 4.20).

In terms of the facilities available to the cricketers, the hypothesis was rejected for turf cricket nets and accepted for all other facilities (Table 4.21).

In terms of the equipment available at the clubs, the hypothesis was accepted (Section 4.2.1.3.4.1).

In terms of the protective equipment supplied by the clubs, the hypothesis was accepted (Section 4.2.1.3.4.2).

In terms of the age of the coaches, the hypothesis was accepted (Section 4.2.1.3.5.1).

In terms of the number of years coaching cricket, the hypothesis was accepted (Section 4.2.1.3.5.2(a)).

In terms of the number of years coaching Premier League cricket, the hypothesis was accepted (Section 4.2.1.3.5.2(b)).

In terms of the level of cricket coached, the hypothesis was accepted for primary school (Section 4.2.1.3.5.3.1), high school (Section 4.2.1.3.5.3.2), club (Section 4.2.1.3.5.3.3), provincial (Section 4.2.1.3.5.3.4) and national level (Tables 4.22 and 4.23).

In terms of coaching qualification(s), the hypothesis was accepted (Section 4.2.1.3.5.4).

In terms of training completed, the hypothesis was accepted (Tables 4.24 and 4.25).

In terms of injuries and pre-season training, the hypothesis was accepted for all injuries (Section 4.2.1.3.6.2).

In terms of general fitness, the hypothesis was accepted (Section 4.2.1.3.6.3).

In terms of endurance training, the hypothesis was accepted (Section 4.2.1.3.6.4).

In terms of speed training, the hypothesis was rejected (Section 4.2.1.3.6.5).

In terms of strength training, the hypothesis was accepted (Section 4.2.1.3.6.6).

In terms of skills training, the hypothesis was accepted (Section 4.2.1.3.6.7).

In terms of sponsorship, the hypothesis was accepted (Section 4.2.1.3.7).

4.3.1.4 To determine the existence of any association between prevalence, risk factors and management factors among cricket players in the greater Durban area.

4.3.1.4.1 Hypothesis 5

It could be hypothesized that there are no relationships between the risk factors, their management and the injury rate of the cricket player.

In terms of the variables and current injury (Table 4.28), the hypothesis was accepted for Q9.1 (Hours batting?), Q9.2 (Hours bowling?), Q9.3 (Hours fielding?), Q11 (Hours of gym work per week?), Q12 (Any pre-season training? (yes)), Q15 (Do you have any injuries? (yes)), Q25.1 (Cricket field?), Q25.1 (very poor), Q25.1 (poor), Q26.1 (Batting equipment), Q26.2 (Bowling machine?), Q26.3 (Cricket balls?), and Q26.4 (wicket-keeping equipment?). The hypothesis was rejected for Q25.1 (average).

In terms of the variables and current injury (Section 4.2.1.4.2), the hypothesis was accepted for Q31 (Years coaching cricket?), Q32 (Years coaching Premier League cricket?), Q33 (yes), Q36.1 ((yes) General fitness?), Q36.2 ((yes) Endurance training?), Q36.3 ((yes) Speed training?), and Q36.4 ((yes) Strength training?).

In terms of the variables and current injury (Table 4.31(a)), the hypothesis was accepted for Q39 (First aid (no)), and rejected for Q39 (baseline-no coaches) and Q39 (First aid (yes)).

In terms of the variables and current injury (Table 4.31(b)), the hypothesis was rejected for presence of first aid.

4.3.2 Previous injury

4.3.2.1 To determine the prevalence of injuries in cricket players in the greater Durban area.

4.3.2.1.1 Hypothesis 1

It could be hypothesized that injuries are not common in cricket players in the greater Durban area.

In terms of prevalence of injury, this hypothesis is ***accepted*** (Section 4.2.2.1.1) if the comparison is made to the literature. In terms of the prevalence of the injury, this hypothesis is ***accepted*** for lower limb, upper limb, and back and trunk.

In terms of prevalence of injury, this hypothesis is ***rejected*** for lower back, shoulder, ankle, leg / calf, Achilles tendon, and elbow injuries; and the hypothesis is ***accepted*** for foot / toes, knee, hamstring, quadriceps, hip groin, and hand / finger.

In terms of types of injury, the injury trends were the same or similar, this hypothesis is ***rejected*** for lower back, knee, shoulder, leg / calf, quadriceps, and Achilles tendon injuries (Section 4.2.2.1.1):

In terms of the injury, the injury trends were the same for lower limb, upper limb, and back and trunk. Therefore the hypothesis is ***rejected*** for these body regions injured (Table 4.32).

In terms of types of injury, the injury trends were the same, this hypothesis is ***accepted*** for foot / toes, knee, hip groin, hand / finger, and 'other' injuries (Sections 4.2.2.1.1).

In terms of the injury, the injury trends were different for foot / toes, ankle, hamstring, hip / groin, elbow, and hand / finger. Therefore the hypothesis is accepted for these injuries (Table 4.32).

4.3.2.1.2 Hypothesis 2

It could be hypothesized that there are no specific injuries to the player's position/role in the cricket team (e.g. type of bowler, batsman, fielder and/or all rounder).

In terms of injuries to roles performed in the cricket team, the hypothesis is rejected for foot / toes, lower back, shoulder and hand / finger injuries to fast / medium bowlers (Table 4.39); shoulder and hand / finger injuries to slow / spin bowlers (Table 4.40); hip / groin injury to top order (1-3) batsman (Table 4.41); knee, elbow and hand / finger injuries to wicket-keepers (Table 4.42); and hip / groin to fielders (Table 4.93).

In terms of injuries to roles performed in the cricket team, the hypothesis is accepted for all other injuries reported in fast / medium bowlers (Table 4.39), in slow / spin bowlers (Table 4.89), in top order (1-3) batsmen (Table 4.41), in middle order (4-6) batsmen (Section 4.2.2.2.2), in wicket-keepers (Table 4.42), and in fielders (Table 4.43).

4.3.2.2 To determine the risk factors leading to cricket injuries in the greater Durban area.

4.3.2.2.1 Hypothesis 3

It could be hypothesized that there are no predisposing risk factors linked to cricket injuries.

In terms of the age of the cricketer, the hypothesis was accepted for all injuries (Table 4.34).

In terms of the ethnicity of the cricketer, the hypothesis was rejected for foot / toes and quadriceps injuries, and accepted for all other injuries (Table 4.36).

In terms of the weight and height (BMI), the hypothesis was accepted for all the injuries (Section 4.2.2.1.4).

In terms of medical aid, the hypothesis was accepted for all injuries (Section 4.2.2.1.5).

In terms of the clubs that the cricketer belonged to, the hypothesis was accepted for all injuries (Table 4.37).

In terms of the role of the fast / medium bowler, the hypothesis was rejected for foot / toes and hand / finger injuries, and accepted for all other injuries (Table 4.39).

In terms of the role of the slow / spin bowler, the hypothesis was rejected for hand / finger and shoulder injuries, and accepted for all the injuries (Table 4.40).

In terms of the role of the top order (1-3) batsman, the hypothesis was rejected for hip / groin injuries, and accepted for all the injuries (Table 4.41).

In terms of the role of the middle order (4-6) batsman, the hypothesis was accepted for all injuries (Section 4.2.2.2.2).

In terms of the role of the wicket-keeper, the hypothesis was rejected for elbow and hand / finger injuries, and accepted for all other injuries (Table 4.42).

In terms of the role of the fielder, the hypothesis was rejected for hip / groin injury, and accepted for all other injuries (Table 4.43).

In terms of foot / toes injury, the hypothesis was accepted for all the descriptors of previous injury (Section 4.2.2.1.3).

In terms of ankle injury, the hypothesis was accepted for all the descriptors of previous injury (Section 4.2.2.1.3).

In terms of Achilles tendon injury, the hypothesis was accepted for all the descriptors of previous injury (Section 4.2.2.1.3).

In terms of leg / calf injury, the hypothesis was accepted for all the descriptors of previous injury (Section 4.2.2.1.3).

In terms of knee injury, the hypothesis was accepted for all the descriptors of previous injury (Section 4.2.2.1.3).

In terms of hamstring injury, the hypothesis is accepted for all the descriptors of previous injury (Section 4.2.2.1.3).

In terms of quadriceps injury, the hypothesis was accepted for all the descriptors of previous injury (Section 4.2.2.1.3).

In terms of hip / groin injury, the hypothesis was accepted for all the descriptors of previous injury (Section 4.2.2.1.3).

In terms of lower back injury, the hypothesis was rejected for form of cricket in which the injury occurred and severity, and accepted for all the descriptors of previous injury (Table 4.44).

In terms of shoulder injury, the hypothesis was rejected for severity, and accepted for all the other descriptors of previous injury (Table 4.45)

In terms of elbow injury, the hypothesis was accepted for all the descriptors of previous injury (Section 4.2.2.1.3).

In terms of hand / finger injury, the hypothesis was accepted for all the descriptors of previous injury (Section 4.2.2.1.3).

4.3.2.3 To determine the management strategies of cricket injuries in the greater Durban area.

4.3.2.3.1 Hypothesis 4

It could be hypothesized that are no incorrect or inadequate management strategies that may be linked to the occurrence of cricket injuries.

In terms of practitioners consulted for previous injuries, the hypothesis was rejected for Homoeopath and Physiotherapist, and accepted for all the other practitioners (Table 4.46).

In terms of practitioners rated for previous injuries, the hypothesis was accepted for all the practitioners (Section 4.2.2.3.1).

In terms of first aid at all the matches, the hypothesis was accepted (Section 4.2.2.3.2.1).

In terms of medical staff involved with the team, the hypothesis was accepted (Section 4.2.2.3.2.2).

In terms of the facilities available to the cricketers, the hypothesis was and accepted for all the facilities (Section 4.2.2.3.3.1).

In terms of the equipment available at the clubs, the hypothesis was rejected for batting equipment, and accepted for all other equipment (Table 4.47).

In terms of the protective equipment supplied by the clubs, the hypothesis was accepted (Section 4.2.2.3.4.2).

In terms of the age of the coaches, the hypothesis was accepted (Section 4.2.2.3.5.1).

In terms of the number of years coaching cricket, the hypothesis was accepted (Section 4.2.2.3.5.1(a)).

In terms of the number of years coaching Premier League cricket, the hypothesis was accepted (Section 4.2.2.3.5.1(b)).

In terms of the level of cricket coached, the hypothesis was accepted for primary school (Section 4.2.2.3.5.3.1), high school (Section 4.2.2.3.5.3.2), club (Section 4.2.2.3.5.3.3), provincial (Section 4.2.2.3.5.3.4) and national level (Table 4.48).

In terms of coaching qualification(s), the hypothesis was accepted (Tables 4.50 and 4.51).

In terms of training completed, the hypothesis was rejected for hours spent batting and hours spent bowling, and accepted (Tables 4.52 and 4.53).

In terms of injuries and pre-season training, the hypothesis was accepted for all injuries (Section 4.2.2.3.6.2).

In terms of general fitness, the hypothesis was accepted (Section 4.2.2.3.6.3).

In terms of endurance training, the hypothesis was accepted (Section 4.2.2.3.6.4).

In terms of speed training, the hypothesis was accepted (Section 4.2.2.3.6.5).

In terms of strength training, the hypothesis was accepted (Tables 4.54 and 4.55).

In terms of skills training, the hypothesis was accepted (Section 4.2.2.3.6.7).

In terms of sponsorship, the hypothesis was accepted (Tables 4.56 and 4.57).

4.3.2.4 To determine the existence of any association between prevalence, risk factors and management among cricket players in the greater Durban area.

4.3.2.4.1 Hypothesis 5

It could be hypothesized that there are no relationships between the risk factors, their management and the injury rate of the cricket player.

In terms of variables and previous injury (Table 4.60), the hypothesis was accepted for Q9.1 (Hours batting?), Q9.2 (Hours bowling?), Q9.3 (Hours fielding?), Q11 (Hours of gym work per week?), Q12 (Any pre-season training?(yes)), Q15 (Do you have any injuries?(yes)), Q25.1 (Cricket field?), Q25.1 (very poor), Q25.1 (poor), Q25.1 (average), Q26.1 (Batting equipment?), Q26.2 (Bowling Machine?), Q26.3 (Cricket balls?), Q26.4 (Wicket-keeping equipment?), and Q26.5 (‘Other’?).

In terms of previous injuries and selective coaching parameters, the hypothesis was accepted (Table 4.63).

4.3.3 Regression analyses of non-injury variables

In terms of age and pre-season training, the hypothesis was accepted (Section 4.2.3.1.1).

In terms of age and general fitness, the hypothesis was accepted (Section 4.2.3.1.2).

In terms of age and endurance training, the hypothesis was accepted (Section 4.2.3.1.3).

In terms of age and speed training, the hypothesis was accepted (Section 4.2.3.1.4).

In terms of age and strength training, the hypothesis was accepted (Section 4.2.3.1.5).

In terms of age and skills training, the hypothesis was accepted (Section 4.2.3.1.6).

In terms of ethnicity and pre-season training, the hypothesis was rejected (Tables 4.64 and 4.65).

In terms of ethnicity and general fitness, the hypothesis was accepted (Tables 4.66 and 4.67).

In terms of ethnicity and endurance training, the hypothesis was accepted (Tables 4.68 and 4.69).

In terms of ethnicity and speed training, the hypothesis was rejected (Tables 4.70 and 4.71).

In terms of ethnicity and strength training, the hypothesis was accepted (Section 4.2.3.2.5).

In terms of ethnicity and skills training, the hypothesis was accepted (Section 4.2.3.2.6).

In terms of ethnicity and 'other', the hypothesis was accepted (Table 4.72).

In terms of club and pre-season training, the hypothesis was rejected (Tables 4.73 and 4.74).

In terms of club and general fitness, the hypothesis was rejected (Tables 4.75 and 4.76).

In terms of club and endurance training, the hypothesis was rejected (Tables 4.77 and 4.78).

In terms of club and speed training, the hypothesis was rejected (Tables 4.79 and 4.80).

In terms of club and strength training, the hypothesis was rejected (Tables 4.81 and 4.82).

In terms of club and skills training, the hypothesis was rejected (Tables 4.83 and 4.84).

4.4 Conclusion

The majority of the participants ranged from 18 to 25 years of age (mean = 22.2), with the 21-25 age range sustaining the majority of the current injuries. White players and White predominated clubs accounted for the majority of the cricketers.

The majority of current injuries occurred in 60 over matches, were moderate (mild shoulder injury (*p*=.030)), acute, and limited the players ability to play cricket. With respect to current injuries, the lower limb accounted for the majority of these, accumulatively. Of all areas however, the lower back region (11.9%) represented the area in which the majority of current injuries occurred. The Indian and White players (*p*=.013) and Indian predominated clubs (Section 4.2.1.2.1) were the most likely to sustain these injuries. Fast / medium bowlers sustained the majority of current injuries, with the lower back injury predominating followed by ankle (*p*=.043) and hip / groin (*p*=.045) injuries. Knee injury (*p*=.030) in the wicket-keeper, and quadriceps injury (*p*=.021) in the fielder were significant.

Physiotherapists were the most consulted and highly rated practitioner, with the Homoeopath (*p*=.032) being the least consulted in terms of current injury. The absence of first aid at matches (*p*=.001) and medical staff involved with the team (*p*=.017) was found to be a predictor of current injury. Additionally an average rating of turf cricket net was a predictor of injury (*p*=.018), and an average rating for a cricket field was (*p*=.024) was found to be significantly related to current injury.

It was found that the older the coach, the more likely a cricketer within their team will have had an injury (non-significant). Of the training performed by the cricketers, the trend indicated that a lack of pre-season, general fitness, endurance and strength training, and too much speed and skills training seemed to be a non-significant predictor of injury.

In comparison to current injuries, the majority of previous injuries were within the under-21 age range. White players and White predominated clubs accounted for the majority of the cricketers.

The majority of previous injuries occurred in 60 over matches (lower back injury (p=.044) in 45 over matches), were moderate (severe lower back injury (p=.024)), acute, and limited the players ability to play cricket. With respect to previous injuries, the lower limb accounted for the majority of these, accumulatively. Of all areas however, the lower back region (9.9%) represented the area in which the majority of previous injuries occurred. The White players (foot / toes injury (p=.032) and quadriceps injury (p=.041)) and White predominated clubs (Section 4.2.2.2.1) were the most likely to sustain these injuries. Fast / medium bowlers sustained the majority of previous injuries, with the lower back injury predominating followed by foot / toes (p=.020) and hand / finger (p=.026) injuries. Hip / groin injury in the top order (1-3) batsman (p=.040) and fielder (p=.021), elbow injury (p=.001) and hand / finger (p=.030) in the wicket-keeper, and quadriceps injury (p=.021) in the fielder were significant.

Physiotherapists (p=.005) were the most consulted and highly rated practitioner, with the Homoeopath (p=.0.45) being the least consulted and rated in terms of previous injury. Trends indicate that a presence of first aid at matches (non-significant) seems to be a possible predictor of previous injury. Facilities were not related to previous injuries in any significant manner. Although trends indicated that a presence of batting equipment (p=.028) supplied to the cricketers was a predictor of previous injury.

Similarly to current injuries, it was found that the older the coach, the increased the likelihood that a cricketer within their team would have had a previous injury (non-significant). Of the training performed by the cricketers, the trend indicated that a lack of general fitness, endurance and strength training, and too much pre-season, speed and skills training seemed to be a non-significant predictor of previous injury. Also, increased hours of batting (p=.017) or bowling (p=.048) training, were found to be a predictors of previous injury.

Through regression analysis in the context of current injuries it was found that a team with no coach also lacked first aid at matches (p=.001); whereas the association between age and the factors of pre-season, general fitness, endurance, speed and strength training were not significantly related. Conversely the association between ethnicity and pre-season training, found that Black players were significantly less likely to participate (p=.044), which was similar to endurance, speed (p=.000) and strength training, whereas ethnicity and general fitness indicated that White players where less likely to participate in this activity.

With regards to current injury, the association between club and those cricketers who did take part in pre-season (p=.002) (Collegians, Delta, Pinetown and Topham), general fitness (p=.000) (Tertiary), endurance (p=.000) (Berea Rovers, Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham), strength (p=.000) incurred more injuries, and those cricketers who did not take part in speed (p=.000) (Collegians, Crusaders, Pinetown and Tertiary) and skills (p=.000) training (Berea Rovers, Chatsworth United, Crusaders, Delta, Pinetown, Tertiary and Topham) incurred less injuries.

Through regression analysis in the context of previous injuries it was found that the association between age and the factors of pre-season, general fitness, endurance, speed and strength training were not significantly related. Conversely the association between ethnicity and pre-season (p=.044) and speed (p=.000) training, found that Black players were significantly less likely to participate, which was similar to endurance and strength training, whereas ethnicity and general fitness indicated that White players where less likely to participate in this activity, and ethnicity and skills training indicated that Black and Indian players were less likely to participate in this activity.

With regards to previous injury, the association between club and those cricketers who did take part in general fitness (p=.000) (Tertiary), endurance (p=.000) (Berea Rovers, Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham), speed (p=.000) (Collegians, Crusaders, Pinetown and Tertiary) and strength (p=.000) incurred more injuries, and those cricketers who did not take part in pre-season (p=.002) (Collegians, Delta, Pinetown and Topham) and skills (p=.000) training (Berea Rovers, Chatsworth United, Crusaders, Delta, Pinetown, Tertiary and Topham) incurred less injuries.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter incorporates a summary of the results of the study. Conclusions about the results are drawn, and recommendations are provided for future studies based on the results as well as the limitations of this study.

5.2 Conclusions

Of the current injuries mild shoulder injury (*p*=.030) was found to be significant. The Indian and White players (*p*=.013) were the most likely ethnic groups to sustain a lower back injury. Fast / medium bowlers sustained ankle (*p*=.043) and hip / groin (*p*=.045) injuries, which were significant. Knee injury (*p*=.030) in the wicket-keeper, and quadriceps injury (*p*=.021) in the fielder were significant.

The Homoeopath (*p*=.032) was the least consulted, which was significant. The absence of first aid at matches (*p*=.001) and medical staff involved with the team (*p*=.017) was found to be a predictor of current injury. Additionally an average rating of turf cricket nets was a predictor of injury (*p*=.018), and an average rating for a cricket field was (*p*=.024) was found to be significantly related to current injury.

It was found that the older the coach, the more likely a cricketer within their team would have had an injury (non-significant). Of the training performed by the cricketers, the trend indicated that a lack of pre-season, general fitness, endurance and strength training, and too much speed and skills training seemed to be a non-significant predictor of injury.

In comparison to current injuries, the majority of lower back previous injuries (*p*=.044) occurred in 45 over matches, with severe lower back injury (*p*=.024) being significant. White players sustained significant foot / toes (*p*=.032) and quadriceps injury (*p*=.041). Fast / medium bowlers sustained significant foot / toes (*p*=.020) and hand / finger (*p*=.026) injuries. Hip / groin injury in the top order (1-3) batsman (*p*=.040) and fielder (*p*=.021), elbow injury (*p*=.001) and hand / finger (*p*=.030) in the wicket-keeper, and quadriceps injury (*p*=.021) in the fielder were also found to be significant.

Physiotherapists (*p*=.005) were the most consulted and highly rated practitioner, with the Homoeopath (*p*=.0.45) being the least consulted and rated in terms of previous injury. Trends indicated that a presence of batting equipment (*p*=.028) supplied to the cricketers was a predictor of previous injury.

Similarly to current injuries, of the training performed by the cricketers, the trend indicated that increased hours of batting (*p*=.017) or bowling (*p*=.048) training, were found to be a predictors of previous injury.

Through regression analysis in the context of current injuries it was found that a team with no coach also lacked first aid at matches (*p*=.001). Conversely the association between ethnicity and pre-season training, found that Black players were significantly less likely to participate (*p*=.044), which was similar to speed (*p*=.000) training.

With regards to current injury, the association between club and those cricketers who did take part in pre-season (*p*=.002) (Collegians, Delta, Pinetown and Topham), general fitness (*p*=.000) (Tertiary), endurance (*p*=.000) (Berea Rovers, Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham), strength (*p*=.000) incurred more injuries, and those cricketers who did not take part in speed (*p*=.000) (Collegians, Crusaders, Pinetown and Tertiary) and skills (*p*=.000) training (Berea Rovers, Chatsworth United, Crusaders, Delta, Pinetown, Tertiary and Topham) incurred less injuries.

Through regression analysis in the context of previous injuries it was found that the association between age and the factors of pre-season (*p*=.044) and speed (*p*=.000) training, found that Black players were significantly less likely to participate.

With regards to previous injury, the association between club and those cricketers who did take part in general fitness (*p*=.000) (Tertiary), endurance (*p*=.000) (Berea Rovers, Chatsworth United, Collegians, Crusaders, Pinetown, Tertiary and Topham), speed (*p*=.000) (Collegians, Crusaders, Pinetown and Tertiary) and strength (*p*=.000) incurred more injuries, and those cricketers who did not take part in pre-season (*p*=.002) (Collegians, Delta, Pinetown and Topham) and skills (*p*=.000) training (Berea Rovers, Chatsworth United, Crusaders, Delta, Pinetown, Tertiary and Topham) incurred less injuries.

5.3 Recommendations

Methodological:

To conduct a study on the incidence of injuries in premier league cricket in the greater Durban area.

To conduct a study on the mechanisms of injury involved in cricket injuries.

To conduct a study on the incidence of spondylolysis in amateur fast bowlers.

To conduct a study on the prevalence of skin cancer in amateur cricket.

To conduct a study on the impact of psychological factors on cricket injury.

To conduct a study with an increase sample size by including all amateur leagues (and clubs) in the greater Durban area.

To conduct a study of an injury profile and / or risk factors involved in school cricketers.

This study focused on the clubs from the Premier League in the greater Durban area, which involved 12 clubs and 144 cricketers and 12 coaches, giving a total number of 156 participants. This small number may have resulted in some of the statistics being insignificant. Future studies should look at surveying a wider pool of participants, from other leagues, so that the results will more accurately portray the cricketing population of the greater Durban area.

Future studies should look at the intrinsic risk factors associated with cricket injuries as this study mainly focused on the extrinsic factors leading to injuries.

Biomechanical factors which may lead to injuries in cricketers was not studied in this research. Future studies should include this in their study.

This was a questionnaire based study looking at previous and current injuries for one season. Future research should include injuries and risk factors from several seasons, from a league, club, bowler, batsman, fielder, wicket-keeper, and / or all-rounder point of view.

Pragmatic:

The association between prevalence of current injuries and no first aid at matches was shown to be significant. Therefore, in order to reduce the prevalence of current and previous injuries, providing some form of first aid at matches may reduce the prevalence of current injuries. Thus, it is recommended that first aid at professional matches, in order to reduce the prevalence of injuries, be studied.

Lower back injuries with regards to White and Indian players were shown to be significant. Thus, the coach should make sure that all his players perform correct warm-ups, educate himself and his players on proper technique (esp. in fast bowlers), and avoid a too high or too low workload during practice and matches.

The association of medical staff at the matches and previous injury was significant at the 95% level. Therefore, the coach should investigate the possibility of having medical staff involved with the team, or at least make them available to their players when they get injured, in order to reduce the prevalence of injuries. Thus, it is recommended that medical staff for teams, in order to reduce the prevalence of injuries, be studied.

Based on the result of the comparison of ethnicity to pre-season training (current and previous injury); and speed training (current injury). The coach needs to educate himself and his players on correct training techniques and workloads and make sure they implement them, and make facilities available to players.

Based on the result of the comparison of club to pre-season training (to current and previous injury); general fitness (previous injury); endurance training (previous injury); speed training (previous injury); strength training (current injury); and skills training (previous injury). The coaches should consider educating himself and all his players on the importance of correct training techniques and minimum levels required for cricket, and assess the players' at regular intervals.

Future research:

Facilities or equipment were suggested to play a role in Black players being the most likely to sustain foot / toes, ankle and knee injuries. So, further research is needed to determine the strength of this observation.

The intensity and volume with which the two (current and previous injury) groups play cricket cannot be compared as it was not measured in this study, so the effect that this may have on the injuries of the players should be considered. It is therefore suggested that these different aspects form part of a future research endeavour.

Of the lower back injuries, the majority were sustained by the 21-25 age group, followed by the under-21 age group and over-26 age group. Although, these relationships were insignificant, it was suggested they past through a cyclic degeneration process, as put forward by Kirkaldy-Willis and Burton (1983) and Bergmann, Petersen and Lawrence (1993). Therefore, although possible in terms of an explanation for the outcomes of this study, further research would be required in order to validate truth of this suggested parallel.

Lower back injuries was statistically significant (p=.013) between the ethnic groups. One possible reason for this is may be that within the Premier League context of this study White players were the most likely to have specific roles and therefore presented with role specific injuries. Further research is needed in this area.

Middle order (4-6) batsmen were shown that they may have had a significant association with hand / finger injury (p=.082), if the sample size had been larger. Therefore it is suggested that this association be given due diligence in further research in order to determine whether sample size influenced this association negatively in this research.

The hip / groin injury could not be compared to literature with respect to fast bowlers, form of cricket, nature and severity of the injury, and whether or not it affected the ability to play cricket. The recommendation is for the hip / groin injury to be studied further.

Orchard and James (2002) found that 'other' injuries in their study were mainly due to medical illness. They also found that the majority of these "other injuries" were incurred by fast bowlers, followed by batsmen. Based on this research it could be assumed that further research is needed to identify the 'other' causes of cricket injuries.

Further research is needed to identify acute, sub-acute and chronic injuries in the areas of type of injury, region of injuries, mechanism of injury, ethnicity, facilities, equipment, or coaching differences between the clubs, because the number of participants in this study was small.

It has been suggested that the older the coach, the more likely a cricket player within their team is likely to be injured which contradicts the expectation that older coaches have greater experience which would mitigate against injury. However, it is also likely that younger coaches have greater levels of training as this is now a requirement within the sporting arena that was not so stringent in the past. In this study conclusive recommendations and further statistical analysis in order to evaluate these assertions were not possible due to the small sample size of coaches and therefore it is suggested that this area be further investigated.

It is assumed that coaches with coaching qualification(s) would result in a significantly lower rate of injury. Which may be due to the coaches' ability to regulate training schedules. However, the role of the coach is less prominent at an amateur level as the players focus is not on obtaining professional sponsorship or their livelihood from cricket, thus further eroding the principle powers the coach would have at a professional level. These parameters were not considered in this study and it is suggested that future research consider these.

The effects of cross-training or cricketers participating in other sports between cricket seasons should be investigated as factors being protective or facilitative of current injuries.

As a limitation of this study may have been the sample size, it is recommended that future studies reassess the relationship between the levels of endurance training and the rate of current injury occurrence, prevalence and incidence.

It is therefore suggested that future research be done in the areas of years coaching cricket, years coaching premier league cricket, and training that has been done, to clarify the contribution of these factors as dependant or independent in current injury causation; especially with a larger sample size and coaching population that is less homogenous.

Lower back (p=.076) and shoulder (p=.073) injuries could have been found to be significant for fast / medium bowlers had the sample size for this study been larger. Thus it is recommended that this be further analyzed in future research in order to determine whether sample size does indeed play a role.

With respect to batsmen, wicket-keepers and fielders it would seem that the comparative injuries between current (Tables 4.12 – 4.15) and previous injury would be similar to the trend suggested by Stretch (2003) with regards to batsmen. However, with the paucity of literature in this area it is suggested that further research be conducted to confirm this finding.

The number of cricketers with a current injury, was associated with a higher mean age of coaches as compared to those who had no current injury. This would suggest that the older the coach the more likely a cricket player within their team is likely to be injured which contradicts the expectation that older coaches have greater experience which would mitigate against injury. However, it is also likely that younger coaches have greater levels of training as this is now a requirement within the sporting arena that was not so stringent in the past. In this study conclusive recommendations and further statistical analysis in order to evaluate these assertions were not possible due to the small sample size of coaches and therefore it is suggested that this area be further investigated.

Of those players with a coach with coaching qualification(s), 24 (35.3%) had a previous injury; and those players with a coach without coaching qualification(s), 22 (33.3%) had a previous injury. This may be due the small sample of participants in this study, or to the greater demands that the coach may place on the cricketers to perform. More research into this area is needed to clarify this issue.

From this study it seems that doing pre-season training may well be a risk factor for injury in the season, but this can only be confirmed or denied with a greater sample of cricketers. The effects of cross-training or cricketers participating in other sports between cricket seasons should be investigated as factors being protective or facilitative of injuries.

It is therefore suggested that future research consider re-wording or defining the exact criteria for current and previous injury. Additionally questions surrounding the concepts of acute / traumatic or chronic / repetitive strain injury are included and investigated.

Based on the result of the comparison of age to pre-season training (current and previous injury); endurance training (current and previous injury); speed training (current and previous injury); strength training (current and previous injury); skills training (current and previous injury); skills training (current and previous injury). Future research needs to be investigated.

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APPENDIX A1

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8 July 2009

To Whom It May Concern:

I hereby give written consent to Rory Tychsen for the use of a modified version of my Competitive Swimmers injury Questionnaire in his research.

Yours Sincerely

Dr. Kelly Sutherland
Chiropractor

APPENDIX A2

Section 1: Patient Information

1. Age in years?

Years

2. What is your sex?

Male	Female

3. Which ethnic group do you belong to?

Black	White	Coloured	Asian	Indian

4.what other exercise do you do on a regular basis besides swimming (i.e. twice a week.)?
…………………………………………………………………………………………………
…………………………………………………………………………………………………
……………………………………………………………………………………

5. Do you compete in any other sport besides swimming? If yes, please specify.
…………………………………………………………………………………………………
…………………………………………………………………………………………………
……………………………………………………………………………………

6. Please state your worst two injuries form the sport mentioned in question 5.
…………………………………………………………………………………………………
…………………………………………………………………………………………………
……………………………………………………………………………………

7. Do you eat a balanced diet?

Yes	No

8. Do you take any supplements?

Yes	No

9. If you answered yes to question 8, please specify what supplements you are taking.
…………………………………………………………………………………………………
…………………………………………………………………………………………………
……………………………………………………………………………………

Section 2: Swimming History

7. At what age it you start swimming? …………………. Years.

8. How many years have you been swimming competitively?
…………………Years.

9.At present how many hours per week do you train swimming?
……………………………………………………………………………….

9.At present how many hours per week of land training to you do?
…………………………………………………………………………………

10.On average how many kilometres do you swim per week?
……………………………………………………………………………….

11. What is your main stroke?

Butterfly	Backstroke	Breaststroke	Freestyle	Individual Medley

12. What is your second main stroke?

Butterfly	Backstroke	Breaststroke	Freestyle	Individual Medley

13. Would you classify yourself as?

Sprinter (50 /100m)	Middle distance swimmer (200 /400m)	Long distance swimmer (800 / 1500m +)

13. What is your main event?
…………………………………………………………………………………………
………………………………………………………………………………

14. What is your second main event?
…………………………………………………………………………………………
………………………………………………………………………………

15. What other events do you swim?
…………………………………………………………………………………………
………………………………………………………………………………

16. What is the highest level at which you have competed?
………………………………………………………………………………………………
……………………………………………………………………………………

Section 3: Previous Swimming Injuries

17. Have you **ever** sustained an injury due to swimming?

Yes	No

18. If yes, identify the injury? (I.e. was it acute or chronic, was traumatic or a repetitive strain injury?)
………………………………………………………………………………………………
…………………………………………………………………………………….

19. Do you **currently** have any injuries due to swimming?

Yes	No

20. If yes, please identify the injury.
………………………………………………………………………………………………
……………………………………………………………………………………

21. Have you **ever** received treatment for your swimming injury?

Yes	No

22. If yes, what type of treatment did you receive?

Bracing / strapping		Medication/ injections	
Orthopaedic		Home remedies eg: ice	
Physiotherapy		Nutritional therapy	
Chiropractic		Natural therapy eg: Homoeopathy	
Rehabilitation		Other	

If "Other", please specify:
………………………………………………………………………………………………
……………………………………………………………………………………

23 .How often have the following areas of your body been injured while swimming? (This includes any injuries from swimming sustained at **any time during your swimming career.)**

Seldom- once or twice
Often- 3-5 times
Very Often- more than 5 times

A. Foot/ toes	Very often	Often	Seldom
B. Ankle	Very often	Often	Seldom
C. Achilles tendon	Very often	Often	Seldom
D. Leg (calf/ Shin)	Very often	Often	Seldom
E. Knee	Very often	Often	Seldom
F. Hamstring (front of leg)	Very often	Often	Seldom
G. Quadriceps (back of leg)	Very often	Often	Seldom
H. Hip / Groin	Very often	Often	Seldom
I. Lower Back	Very often	Often	Seldom
J. Upper Back	Very often	Often	Seldom
K. Neck	Very often	Often	Seldom
L. head	Very often	Often	Seldom
M. Shoulder	Very often	Often	Seldom
N. Biceps (front of upper arm)	Very often	Often	Seldom
O. Triceps (back of upper arm)	Very often	Often	Seldom
P. Elbow	Very often	Often	Seldom
Q. Forearm	Very often	Often	Seldom
R. Wrist	Very often	Often	Seldom
S. Hand	Very often	Often	Seldom
T. Other	Very often	Often	Seldom

If “Other”, please specify:
……………………………………………………………………………………………
……………………………………………………………………………………

24. Consider the worst injury that you have sustained during swimming. How would you describe it?

Mild	Moderate	Severe

From the list above (Q. 22 A- T) please state the area that was injured the worst:
……………………………………………………………………………………………
……………………………………………………………………………………

25. How have the injuries listed below affected your swimming?

A. Foot/ toes	Prevented swimming	Limited swimming	No effect
B. Ankle	Prevented swimming	Limited swimming	No effect
C. Achilles tendon	Prevented swimming	Limited swimming	No effect
D. Leg (calf/ Shin)	Prevented swimming	Limited swimming	No effect
E. Knee	Prevented swimming	Limited swimming	No effect
F. Hamstring (front of leg)	Prevented swimming	Limited swimming	No effect
G. Quadriceps (back of leg)	Prevented swimming	Limited swimming	No effect
H. Hip / Groin	Prevented swimming	Limited swimming	No effect
I. Lower Back	Prevented swimming	Limited swimming	No effect
J. Upper Back	Prevented swimming	Limited swimming	No effect
K. Neck	Prevented swimming	Limited swimming	No effect
L. head	Prevented swimming	Limited swimming	No effect
M. Shoulder	Prevented swimming	Limited swimming	No effect
N. Biceps (front of upper arm)	Prevented swimming	Limited swimming	No effect
O. Triceps (back of upper arm)	Prevented swimming	Limited swimming	No effect
P. Elbow	Prevented swimming	Limited swimming	No effect
Q. Forearm	Prevented swimming	Limited swimming	No effect
R. Wrist	Prevented swimming	Limited swimming	No effect
S. Hand	Prevented swimming	Limited swimming	No effect
T. Other	Prevented swimming	Limited swimming	No effect

If " Other", please specify:
……………………………………………………………………………………………
…………………………………………………………………………………

26. Has your injuries **ever** caused you to stop training?

Yes	No

27. What is the **longest period**, which you were unable to swim due to the above-mentioned injury /ies?

Less that 3 months	3-6 months	Greater than 6 months

Section 4: Present Swimming Injuries

28. Are you **presently** suffering with any injuries due to swimming?

Yes	No

29. If you answered yes to Q27 please specify the injury.
…………………………………………………………………………………………………
…………………………………………………………………………………………………
…………………………………………………………………………………

30. How would you describe to pain on a scale of 0 to 10 (0 represents no pain and 10 represents severe pain.)

0	1	2	3	4	5	6	7	8	9	10

31. At this moment how does your **present injury** affect your swimming?

Prevents swimming	Severe limitation & pain	Some limitation	Some pain	No effect

32. What is the longest period this **present injury** has prevented you from swimming?

Less that 3 months	3-6 months	Greater than 6 months

33. How long have you been suffering with this injury?

Less that 3 months	3-6 months	Greater than 6 months

34. What do you feel is the most likely cause for your injury?

Insufficient warm-up		Over training	
Stretching		Insufficient rest	
Gala		Poor nutrition	
Other			

If " Other", please specify:
…………………………………………………………………………………………………
………………………………………………………………………………………

35. During which activity was your present injury sustained?

Warm-up		Diving	
Tumble turns		Pulling	
Kicking		Fin work	
Paddles		Drills	
Other			

If " Other", please specify:
…………………………………………………………………………………………………
………………………………………………………………………………………

36. Have you ever received stroke correct?

Yes	No

APPENDIX A3

Questionaire on the risk factors and management of cricket injuries in the greater Durban area

Section 1: Personal information

1. Age in years.	

2. Which ethnic group do you belong to? (for statistical purpose)	
Black	
White	
Coloured	
Asian	
Indian	

3. What club do you play/coach for?

4. Are you a ….?	
Player or	
Coach	

(Coaches proceed to **Q.8**)

5. Do you have medical aid?	
Yes	
No	

6. What is your height in cm?	Cm

7. What is your weight in kg?	Kg

Section 2: Cricket History

8. What age did you start playing/coaching cricket competively? (i.e. for a school/club)	yrs

9. For how many years have played/coached cricket?	yrs

For players only. (coaches proceed to **Q.40**)

11. At present, how many hours per week do you train for cricket?	hrs

12. Of this, how many hours per week are for...?	
Fielding	
Bowling	
Batting	
Special skills	

13. Do you train in the gym?	
Yes	
No	

14. On average, how many hours of gym work do you do per week?	hrs

15. Do you play or train for any other sport/s other than cricket?	
Yes	
No	

16. What is/are your role(s) in the team? (you may choose more than one)	
Fast/Medium bowler	
Slow/Spin bowler	
Top order (1-3) batsman	
Middle order (4-6) batsman	
Wicket-keeper	
Specialised fielder (e.g. slip, etc.)	

Section 3: Cricket Injuries (for players only)													
17. Have you sustained any injury/ies in the past season due to cricket?	Yes			If yes, identify the injury/ies below.									
	No												
Body area	**18.1** Current injury	**18.2** Previous injury	**18.3** Recurrent injury	**19. Which was the worst injury?**	**20. Severity**			**21. Effect on cricket?**			**22. Period out of cricket?**		
					Mild	Moderate	Severe	Prevent	Limit	No effect	Less than 3 weeks	3-6 weeks	Greater than 6 weeks
A. Foot/Toes													
B. Ankle													
C. Achilles tendon													
D. Leg/Calf													
E. Knee													
F. Hamstring (back of leg)													
G. Quadriceps (front of leg)													
H. Hip/Groin													
I. Lower back													
J. Upper back													
K. Neck													
L. Head													
M. Shoulder													
N. Biceps (front of upper arm)													
O. Triceps (back of upper arm)													
P. Elbow													
Q. Forearm													
R. Wrist													
S. Hand/Finger													
T. Other (specify):													

Section 3: Cricket Injuries (continued)

Body area	23. During what activity of play did it occur?					24. Which part of the season did it occur?					
	Bowling	Batting	Fielding	Wicket-keeping	Other (specify)	Pre-season	First half of season		Second half of season		Other (specify)
							during match	during training	during match	during training	
A. Foot/Toes											
B. Ankle											
C. Achilles tendon											
D. Leg/Calf											
E. Knee											
F. Hamstring (back of leg)											
G. Quadriceps (front of leg)											
H. Hip/Groin											
I. Lower back											
J. Upper back											
K. Neck											
L. Head											
M. Shoulder											
N. Biceps (front of upper arm)											
O. Triceps (back of upper arm)											
P. Elbow											
Q. Forearm											
R. Wrist											
S. Hand/Finger											
T. Other (specify):											

25. Treatment received	
Bracing/Strapping	
Orthopaedic	
Physiotherapy	
Chiropractic	
Rehabilitation	
Medicine/Injection	
Home remedy e.g.: ice	
Nutritional therapy	
Natural therapy e.g.: Homoeopathy	
Biokinetisist	
Other (specify):	
None	

Section 4: Knowledge and perception		
26. Who do you see for treatment? (please tick)		**27. Rank these practitioners in order (from 1-10) you would see them.**
Biokinetsist		
Orthopaedic surgeon		
Physiotherapy		
Chiropractic		
General practitioner (medical doctor)		
Message therapist		
Neurologist		
Homoeopath		
Other (specify):		
None		

Section 5: Resources

28. What facility/ies were used for training?

Cricket field	
Cricket nets	
Gym	
Pool	
Other (specify):	

29. Whose facility/ies were these?

Schools	
Clubs	
Outside facility	
Other (specify):	

30. How would you rate these facility/ies?

Good	
Average	
Bad	

31. How would you rate the state of the cricket ground?

Hard	
Medium	
Soft	

32. How would you rate your access to medical facilities?

Good	
Average	
Bad	

33. What equipment does the club have?

Bowling machine	
Cricket pitch and field	
Batting equipment	
Wicket-keeping equipment	
Balls	
Sunscreen	
Other (specify):	

34. Does your team have a sponsor/s?

Yes	
No	

35. If yes, what does the sponsorship entail?

Money	
Protective gear	
Playing kit	
Practise kit	
Bats/Balls	
Cones	
Sunscreen	
Supplements	
Other (specify):	

36. Is any protective equipment supplied?

Yes	
No	

37. If yes, what protective equipment is supplied?

Batting pads	
Wicket-keeping gloves and pads	
Batting pads	
Helmets	
Strapping	
Sunscreen	
Other (specify):	

38. Are any supplements supplied to you or other players?

Yes	
No	

39. If yes, what supplements are supplied?

Protein shake	
Creatine	
Steroids	
Multi-vitamin	
Other (specify):	

Section 6: Training, coaching and management (for players and coaches)

40. What training has been done?

	Pre-season	In-season
General fitness		
Endurance training		
Speed training		
Strength traing		
Skills training		
Other (specify):		
None		

41. Who did the training?

Coach	
Staff member	
Professional	
Other (specify):	

42. If a professional, was he brought in specifically for training?

Yes	
No	

43. If "other", did he have experience in the field that he was working?

Yes	
No	

44. Is there a permanent coach of the side?

Yes	
None	

45. Is there more than one coach of the side?

Yes	
No	

46. If yes, how many

1	
2	
More than 3	

47. What is the specific role of each coach?

Bowling coach	
Batting coach	
Fielding coach	
All of the above	
Other (specify):	

48. Is there first aid at all the matches played?

Yes	
No	

49. Are there any medical staff involved with the team?

Yes	
No	

50. If yes, who does the medical staff consist of?

Chiropractor	
Physiotherapist	
Biokineticist	
Medical doctor (GP)	
Personal trainer	
Other (specify):	

Questions 51 to 53 are for coaches only.

51. Do you have any form of coaching qualification(s)?

Yes	
No	

52. If yes, What level is the qualification(s)?	53. What experience do you have as a coach?
>	>

<u>**Thank you for participating in my study, your time is greatly appreciated.**</u>

APPENDIX B - CODE OF CONDUCT

This form needs to be completed by every member of the Focus Group prior to the commencement of the focus group meeting.

As a member of this committee I agree to abide by the following conditions:

1. All information contained in the research documents and any information discussed during the focus group meeting will be kept private and confidential. This is especially binding to any information that may identify any of the participants in the research process.
2. None of the information shall be communicated to any other individual or organisation outside of this specific focus group as to the decisions of this focus group.
3. The information from this focus group will be made public in terms of a journal publication, which will in no way identify any participants of this research.

Member represents	Member's Name	Signature	Contact Details

APPENDIX C

IMPORTANT NOTICE: THIS FORM IS TO BE READ AND FILLED IN BY EVERY MEMBER PARTICIPATING IN THE FOCUS GROUP, BEFORE THE FOCUS GROUP MEETING CONVENES.

CONFIDENTIALITY STATEMENT – FOCUS GROUP DECLARATION

1. All information contained in the research documents and any information discussed during the focus group meeting will be kept private and confidential. This is especially binding to any information that may identify any of the participants in the research process.

2. The returned questionnaires will be coded and kept anonymous in the research process.

3. None of the information shall be communicated to any other individual or organisation outside of this specific focus group as to the decisions of this focus group.

4. The information from this focus group will be made public in terms of a journal publication, which will in no way identify any participants of this research.

Once this form has been read and agreed to, please fill in the appropriate information below and sign to acknowledge agreement.

Please Print in block letters:

Focus Group Member: ______________________ Signature:_________________________

Witness Name: ____________________________ Signature:________________________

Researcher's Name: _______________________ Signature:________________________

Supervisor's /
Co-supervisor's Name: ______________________ Signature:_____________________

<u>APPENDIX D</u> - INFORMED CONSENT FORM

DATE: :

TITLE OF RESEARCH PROJECT:

An investigation into the risk factors and management of cricket injuries in the greater Durban area.

NAME OF SUPERVISOR : Dr G. Haswell

NAME OF RESEARCH STUDENT : Rory Tychsen

Please circle the appropriate answer

		YES/NO	
1.	Have you read the research information sheet?	Yes	No
2.	Have you had an opportunity to ask questions regarding this study?	Yes	No
3.	Have you received satisfactory answers to your questions?	Yes	No
4.	Have you had an opportunity to discuss this study?	Yes	No
5.	Have you received enough information about this study?	Yes	No
6.	Do you understand the implications of your involvement in this study?	Yes	No
7.	Do you understand that you are free to		
	a) withdraw from this study at any time?	Yes	No
	b) withdraw from the study at any time, without reasons given	Yes	No
	c) withdraw from the study at any time without affecting your future health care or relationship with the Chiropractic day clinic at the Durban Institute of Technology.	Yes	No
8.	Do you agree to voluntarily participate in this study	Yes	No
9.	Who have you spoken to regarding this study?		

____

If you have answered <u>NO</u> to any of the above, please obtain the necessary information from the researcher and / or supervisor before signing. Thank You.

<u>Please Print in block letters:</u>

Focus Group Member: ______________________ Signature: ____________________

Witness Name: ____________________________ Signature:____________________

Researcher's Name: ________________________ Signature:____________________

Supervisor's / Co-supervisor's Name: _____________________
Signature:____________________

APPENDIX E

LETTER OF INFORMATION – FOCUS GROUP

Dear Participant,

I would like to welcome you into the focus group of my study, the title of my research project is:
An investigation into the risk factors and management of cricket injuries in the greater Durban area.

Name of Supervisor: Dr. G Haswell

Name of Student: Rory Tychsen

Name of Institution: Durban University of Technology

The purpose of this focus group is to identify and determine the risk factors and managemnt protocols that are been used on cricket players in this area, that may have an affect on the rate of injury in the sport. The discussions will focus on any changes that are neccessary to alter the questionnaire into a more accurate tool.

Your participation in this focus group will remain totally confidential. You are also permitted at any point to disagree with reason at any point in the discussion. Your participation in the focus group is both appreciated and respected.

Thank you for your participation,

Yours sincerely,

Rory Tychsen	Dr. G. Haswell
(Chiropractic student)	(Supervisor)

<u>APPENDIX F</u> - Letter of Information and Consent

Dear participant,

Welcome to my study. Thank you for your interest.

<u>Title of the Research Study:</u>
A Profile of Injuries and Contributing Factors in Premier League Cricket Players in the Greater Durban Area.

<u>Principal Investigator/s:</u>

Name of supervisor:	Dr. G. Haswell (031-563 4451) M.Tech: Chiropractic
Name of Research Student:	Rory Tychsen (031-373 2512)
Name of Institution:	Durban University of Technology

<u>Co-Investigator/s:</u>
There are none.

<u>The purpose of the study:</u>
I am conducting research on cricket injuries among first team premier league cricketers in the greater Durban area. The purpose of this study is to investigate the nature of these injuries among cricketers and to identify the risk factors involved in these injuries and the management thereof.

This study will include cricketers and cricket coaches, from premier league cricket clubs in the greater Durban area. If you agree to participate, you will be required to complete a questionnaire. All the information supplied by you will be treated confidentially and used for research purposes only.

<u>Procedures:</u>
You (cricket player/coach) will be required to complete a questionnaire about cricket injuries, where and how they occur. The average time for cricketer and coach to complete the questionnaire will be 10 minutes.

<u>Risks/ Discomforts and Cost:</u>
There is no risk/discomfort or cost involved from your participation in the study.

<u>Benefits:</u>
The results of this research will be forwarded to the cricket clubs for distribution to your coach, to allow for improved recommendations with regard to your training and management. This will assist in the general improvement of the state of cricket in this province.

<u>Remuneration:</u>
Should you be suffering from any injuries you are offered 1 optional free Chiropractic treatment at the Chiropractic Day Clinic at the Durban University of Technology. This is valid for 1 month.

Costs of the Study:
There is no cost for you to participate in my research.
Confidentiality:
All patient information is confidential and the results will be used for research purposes only. You have the right to be informed of any new findings that are made and you may ask questions of an independent source if you so wish.

Research-related Injury:
The research is questionnaire based, so there is no possibility for injury.

Persons to Contact in the Event of Any Problems or Queries:
If you are not satisfied with any area of the study please contact either myself or my supervisor. If we can not help you then please contact Mr. V. Singh at the Faculty of Health Sciences on (031) 373 2701

Statement of Agreement to Participate in the Research Study:

(I,……………………………………………subject's full name, ID number ……………………………………, have read this document in its entirety and understand its contents. Where I have had any questions or queries, these have been explained to me by ………………………………………………. to my satisfaction. Furthermore, I fully understand that I may withdraw from this study at any stage without any adverse consequences and my future health care will not be compromised. I, therefore, voluntarily agree to participate in this study.

Subject's name (print):……………………Subject's signature:……………………… Date…………
Researcher's name (print)…………………Researcher's signature:……….……… Date:...............
Witness name (print): ……………………Witness signature:…............................ Date………….
Supervisor's name (print):...............................Supervisor's signature:…………… Date:………..

APPENDIX I: Pre-Questionnaire Evaluation Sheet

1 What is your opinion of the subject presented in this questionnaire?
(Please tick the most appropriate box)
- 1.1 Extremely interesting ☐
- 1.2 Interesting ☐
- 1.3 Average ☐
- 1.4 Boring ☐
- 1.5 Very boring ☐

2 Do you think the topics raised in this questionnaire were adequately covered?
- 2.1 Yes ☐
- 2.2 No ☐

3 What is your opinion about the Letter of Information?
(Please tick one box only)
- 3.1 Very clear ☐
- 3.2 Clear ☐
- 3.3 Adequate ☐
- 3.4 Unclear ☐
- 3.5 Needs revising ☐

4 How would you describe the instructions accompanying each of the questions?
(Please tick one box only)
- 4.1 Very clear ☐
- 4.2 Clear ☐
- 4.3 Adequate ☐
- 4.4 Unclear ☐
- 4.5 Needs revising ☐

5 Do you think the questionnaire is too long?
- 5.1 Yes ☐
- 5.2 No ☐

6 What is your opinion of the wording of the questionnaire?
(Please tick the appropriate box)
- 6.1 The meaning of **all questions** is absolutely clear ☐
- 6.2 The meaning of **most** questions is clear ☐
- 6.3 There is too much chiropractic/ medical jargon ☐
- 6.4 The questions will not be understood by lay persons ☐
- 6.5 The questionnaire needs to be revised because it is unclear ☐

If you had any difficulty answering any question/s, please write the number/s of the question/s in the space below with a suggestion on how the question/s can be improved?

____

____

____

____

Thank you for your most valuable time in helping me with my research project.
Please be reminded that the topics discussed above are strictly confidential.

APPENDIX J1: **Post Focus Group Questionnaire**

Questionaire on the prevalence, risk factors and management of cricket injuries in the greater Durban area.

Sections 1 to 5 are for cricket players only.
Section 6 is for coaches only.
Please tick/cross the appropriate box, unless otherwise stated.

Section 1: Player Information					
1. Age	yrs				
2. Ethnicity (for statistical purposes)					
Black	Caucasian	Coloured	Asian	Indian	
3. Height (cm)	cm				
4. Weight (kg)	kg				
5. Which club do you play for?					
6. Do you have medical aid?	Yes				
	No				

Section 2: Cricket history		
7. At what age did you start to play cricket competively? (i.e. for school/club)	yrs	
8. For how many years have you played cricket?	yrs	
9. Presently, how many hours do you train for…?	Batting	hrs
	Bowling	hrs
	Fielding	hrs
	Total	hrs
10. What is/are your main role(s) in the team? (you may choose more than one)	Fast/Medium bowler	
	Slow/Spin bowler	
	Top order (1-3) batsman	
	Middle order (4-6) batsman	
	Wicket-keeper	
	Fielder (specify position):	
11. On average, how many hours of gym work do you do for cricket per week?	hrs	
12. Did you do any pre-season training for cricket?	Yes	
	No	(If no, go to Q.14)
13. If yes to Q.12, how long was it? (specify)	months	
	weeks	
14. How long is/was your season?	months	
	weeks	

Section 3: Cricket injuries

15. Have you sustained any injury/ies in the past season due to cricket?		
	Yes	(If yes, proceed to Q.16)
	No	(If no, proceed to Section 4, Q.23)

Body Area	16.1 Current injury	16.2 Previous injury	17. Indicate the worst injury	18. During which activity did it occur?					19. In which form of cricket did it occur?		20. Severity?			21. Effect on playing cricket?			22. Period out of cricket?		
				Bowling	Batting	Fielding	Wicket-keeping	Other (specify):	T20	Limited	Mild	Moderate	Severe	Prevented	Limited	No effect	Less than 3 weeks	3 - 6 weeks	Greater than 6 weeks
A. Foot/Toes																			
B. Ankle																			
C. Achilles tendon																			
D. Leg/Calf																			
E. Knee																			
F. Hamstring (back of leg)																			
G. Quadriceps (front of leg)																			
H. Hip/Groin																			
I. Lower back																			
J. Upper back																			
K. Neck																			
L. Head																			
M. Shoulder																			
N. Biceps (front of upper arm)																			
O. Triceps (back of upper arm)																			
P. Elbow																			
Q. Forearm																			
R. Wrist																			
S. Hand/Finger																			
T. Other (specify):																			

Section 4: Knowledge and Perception		
23. Who have you seen for treatment of your cricket injuries?		**24. Rank (1-10) these practitioners in order you would see them for your cricket injury?**
Biokineticist		
Chiropractor		
General practitioner		
Homoeopath		
Massage therapist		
Neurologist		
Orthopaedic surgeon		
Physiotherapist		
Other (specify):		
No one		

Section 5: Resources				
25. What facilities are used for training?		**26. How would you rate the state of these facilities?**		
Cricket field		Good	Average	Poor
Cricket nets – concrete		Good	Average	Poor
Cricket nets – turf		Good	Average	Poor
cricket nets – indoor		Good	Average	Poor
Gym		Good	Average	Poor
Pool		Good	Average	Poor
Other (specify):		Good	Average	Poor
27. What equipment does your club have?				
Batting equipment				
Bowling machine				
Cricket balls				
Wicket-keeping equipment				
Other (specify):				
28. Does your club supply any protective equipment?		Yes		
		No	(If no, go to Q.30)	
29. If yes, what protective equipment is supplied?				
Arm guards				
Batting helmets				
Batting pads				
Chest guards				
Strapping				
Thigh guards				
Wicket-keeping gloves and pads				
Other (specify):				

Section 6: Coaches information, Training and Management (For coaches only)

30. Age	yrs	
31. Which club do you coach for?		
32. How many years have you coached cricket?	yrs	
33. Do you have any form of coaching qualification(s)?	Yes	
	No	(If no, go to Q.35)
34. If yes, what level is the qualification(s)?	>	
35. What experience do you have as a cricket coach?	>	
36. What training have you done with the team?	Endurance training	
	General fitness	
	Skills training	
	Speed training	
	Strength training	
	Other (specify):	
	None	
37. Was this training supervised by you (the coach)?	Yes	
	No	
38. Are you the permanent coach of the side?	Yes	
	No	
39. Is there first aid provided at all matches?	Yes	
	No	
	Don't know	
40. Is there any medical staff involved with the team?	Yes	
	No	(If no, go to Q.43)
	Don't know	
41. If yes, who does the medical staff consist of?	Biokineticist	
	Chiropractor	
	General practitioner (medical doctor)	
	Personal trainer	
	Physiotherapist	
	Other (specify):	
42. How would you describe the quality of the medical staff?	Good	**43. Does the team have a sponsor?** Yes
	Average	No
	Bad	

44. If yes, what does the sponsorship entail?	
Money	
Protective equipment	
Playing kit	
Practise kit	
Batting equipment	
Cricket balls	
Cones	
Supplements	
Other (specify):	

APPENDIX J2: Post Focus Group Questionnaire Changes

Questionnaire (Appendix A3) changes to produce Questionnaire (Appendix J1):

Formatting Changes (including answer format options):

1. Added "…in premier league cricket players…" to the research title.

Grammatical and spelling changes:

1. Q.25 "Biokinetitsist" changed to "Biokineticist", "Chiropractic" changed to "Chiropractor". "Message" changed to "Massage", "Physiotherapy" changed to "Physiotherapist" and "None" changed to "No one". Health care providers listed alphabetically.

Questions omitted or added; omitted or added in modification; or combined:

1. Q.10 added.
2. Q.11 deleted.
3. Q.15 deleted.
4. Q.14 added.
5. Q.15 added.
6. Q.16 added.
7. Q.24 deleted.
8. Q.24 added.
9. Q.25 deleted.
10. Q.29 deleted.
11. Q.30 deleted.
12. Q.32 deleted.
13. Q.38 deleted.
14. Q.39 deleted.
15. Q.42 deleted.
16. Q.45 deleted.
17. Q.46 deleted.
18. Q.47 deleted.
19. Q.43 added.

Question or answer options modified:

1. Q.9 added "…you…".
2. Q.10 "Special skills" removed.
3. Q.13 changed "Specialised fielder (e.g. slip, etc.)" to "Fielder (specify position)".
4. Q.19 "Which was the worst injury? (Pick one)" changed to "Indicate the worst injury?"
5. Q.21 added "…playing…"
6. Q.25 "…do…" changed to "…have…".
7. Q.26 "(from 1-10)" changed to "(from 1-5)".
8. Q.29 deleted "Sunscreen".
9. Q.32 deleted "Pre-season" and "In-season".
10. Q.33 "Who did the training?" changed to "Was this training supervised by the coach?".
11. Q.35 added "Don't know".
12. Q.36 added "Don't know".

Heading changes:

1. Changed "Section 1: Patient information" to "Section 1: Personal Information".

Questions completely unchanged:

1. Q.1.
2. Q.2.
3. Q.3.
4. Q.4.
5. Q.5.
6. Q.6.
7. Q.7.
8. Q.8.
9. Q.17.
10. Q.18.1.
11. Q.18.2.
12. Q.18.3.

13. Q.20.
14. Q.22.
15. Q.23.

Questions completely unchanged except for numbering:

1. Q.12 became Q.10.
2. Q.16 became Q.13.
3. Q.26 became Q.25.
4. Q.27 became Q.26.
5. Q.28 became Q.27.
6. Q.31 became Q.28.
7. Q.33 became Q.29.
8. Q.34 became Q.38.
9. Q.35 became Q.39.
10. Q.36 became Q.30.
11. Q.37 became Q.31.
12. Q.40 became Q.32.
13. Q.41 became Q.33.
14. Q.44 became Q.34.
15. Q.48 became Q.35.
16. Q.50 became Q.37
17. Q.51 became Q.40.
18. Q.52 became Q.41.
19. Q.53 became Q.42.

APPENDIX J3: Post Pilot Study Questionnaire Changes

Questionnaire (Appendix J1) changes to produce Questionnaire (Appendix H).

Changes in the questionnaire in the piloting process:

- Topic of research study changed from "An investigation into the prevalence, risk factors and management of cricket injuries in the greater Durban area" to "A profile of injuries and contributing factors in premier league cricket players in the greater Durban area".
- Sections 1-5 and Section 6 were separated for players and coaches, respectively.
- Changed "Section 1: Personal information" to "Section 1: Player Information".
- Highlighted headings for each section (1-6).
- Q.1 "Age in years" changed to "Age".
- Q.2 "which ethnic group do you belong to?" changed to "Ethnicity".
- Q.3 became Q.5.
- Q.5 became Q.6.
- Q.6 became Q.3.
- Q.3 "What is your height in cm?" changed to "Height (cm)".
- Q.7 became Q.4.
- Q.4 "What is your weight in kg" changed to "Weight (kg)".
- Q.8 became Q.7.
- Q.7 "What age did you start playing/coaching cricket competitively?" changed to "At what age did you start to play cricket competitively?".
- Q.9 became Q.8.
- Q.8 "…/coached…" was deleted.
- Q.10 became Q.9.
- Q.9 "Of this, how many hours per week are for …?" changed to "Presently, how many hours do you train for … in a week?", added "Total" and ordered alphabetically.

- Q.13 became Q.10.
- Q.10 added "…main…" and "(you may choose more than one)"
- Q.11 deleted.
- Q.12 became Q.11.
- Q.14 became Q.12.
- Q.12 "Do you do pre-season training?" changed to "Did you do any pre-season training for cricket?"
- Q.15 became Q.13.
- Q.13 "…to Q.12,…" added.
- Q.16 became Q.14.
- Q.17 became Q.15.
- Q.18.1 became Q.16.1.
- Q.18.2 became Q.16.2.
- Q.18.3 deleted.
- Q.19 became Q.17.
- Q.23 became Q.18.
- Q.18 "During what activity of play did it occur?" changed to "During which activity did it occur?".
- Q.24 became Q.19.
- Q.19 added "T20", "45" and "60".
- Q.21 "Effect on playing cricket?" changed to "What effect did it have on you playing cricket?".
- Q.22 "Period out of cricket?" changed to "How long did it prevent you from playing cricket?".
- Q.25 became Q.23.
- Q.23 "Who have you seen for treatment?" changed to "On the list below please tick those practitioners that you have consulted for treatment for your cricket injuries?".
- Q.26 became Q.24.
- Q.24 "Rank these practitioners in order (from 1-5) you would see them?" changed to "Rank all these practitioners below on whether or not you would consult them for your cricket injury?" and changed to a likert scale.
- Q.27 and Q.28 combined and became Q.25.

- Q.25 changed to “How would you rate those facilities available at your club? (Choose only those facilities available at your club from the list below)”, “Cricket nets” changed to “Cricket nets-concrete”, “Cricket nets-turf” and “Cricket nets-indoor”.
- Q.25 changed to a likert scale.
- Q.29 became Q.26.
- Q.26 “…the…” changed to “…your…”, “Balls” changed to “Cricket balls” and were alphabetically ordered.
- Q.30 became Q.27.
- Q.27 “Is any equipment provided?” changed to “Does your club supply any protective equipment?”
- Q.31 became Q.28.
- Q.28 “Box (groin)” added and list alphabetically ordered.
- Section 6 heading “(for coaches only)” added.
- Q.29 added.
- Q.30 added.
- Q.43 became Q.31.
- Q.31 “For…” deleted.
- Q.32 became Q.36.
- Q.32 added.
- Q.33 became Q.37.
- Q.40 became Q.33.
- Q.41 became Q.34.
- Q.35 became Q.39.
- Q.35 added.
- Q.36 became Q.40.
- Q.37 became Q.41.
- Q.38 became Q.43.
- Q.38 added.
- Q.39 became Q.44.
- Q.39 “Is there first aid at all the matches played” changed to “Is there first aid provided at all matches?” and “Yes, all matches” and “Yes, some matches”.

- Q.40 “Are…” changed to “Is…”.
- Q.42 added.
- Q.43 “…your…” changed to “…the…”.

APPENDIX G1 - Letter of Permission to the Premier League Club Chairman

To Whom It May Concern:
My name is Rory Tychsen; I am currently doing my Masters Degree in Chiropractic at the Durban University of Technology,

The title of my research project is:
A Profile of Injuries and Contributing Factors in Premier League Cricket Players in the Greater Durban Area.

Name of supervisor:	Dr G. Haswell M.Tech: Chiropractic	(031- 563 4451)
Name of Research Student:	Rory Tychsen	(031-373 2512)
Name of Institution:	Durban University of Technology	

The purpose of the study:
This study will involve research on competitive cricketers and coaches in the greater Durban area to determine the factors influencing the occurrence of cricket injuries and there management in KwaZulu-Natal.

Procedures:
The cricketers and there coach will be required to complete a questionnaire about cricket injuries, where and how they occur, and there management. The average time for cricketer and coach to complete the questionnaire will be 15 – 30 minutes.

Benefits:
Should they be suffering from any injuries during the course of their participation in this research, they are offered 1 optional free treatment at the Chiropractic Day Clinic at the Durban University of Technology. Also the results of this research will be forwarded to you as the Club leader of your cricket club to allow for improved recommendations with regard to training.

Cost:
There is no cost involved from your participation in the study.

Based on the above-mentioned study, I am required to seek permission at those venues where cricket clubs are housed e.g.: Kingsmead. Therefore I would like to request tour permission to utilize any municipal venue that houses a cricket club within the confines of the greater Durban Area.

Yours in anticipation,

Rory Tychsen **Dr. G. Haswell**

(Chiropractic Intern) (Supervisor)

I (name) ______________________ hereby give Rory Tychsen consent to conduct the above-mentioned research at any Municipal venue housing a cricket club.
Signature: ______________________ Date: __________

APPENDIX G2 - Letter of Permission to the Premier League Club Coach

To Whom It May Concern:

My name is Rory Tychsen; I am currently doing my Masters Degree in Chiropractic at the Durban University of Technology,

The title of my research project is:
A Profile of Injuries and Contributing Factors in Premier League Cricket Players in the Greater Durban Area.

Name of supervisor:	Dr. G. Haswell M.Tech: Chiropractic	(031- 563 4451)
Name of Research Student:	Rory Tychsen	(031-373 2512)
Name of Institution:	Durban University of Technology	

The purpose of the study:
This study will involve research on competitive cricketers and coaches in the greater Durban area to determine the factors influencing the occurrence of cricket injuries and there management in KwaZulu-Natal.

Procedures:
The cricketers and there coach will be required to complete a questionnaire about cricket injuries, where and how they occur, and there management. The average time for cricketer and coach to complete the questionnaire will be 15 – 30 minutes.

Benefits:
Should they be suffering from any injuries during the course of their participation in this research, they are offered 1 optional free treatment at the Chiropractic Day Clinic at the Durban University of Technology. Also the results of this research will be forwarded to you as the Club leader of your cricket club to allow for improved recommendations with regard to training.

Cost:
There is no cost involved from your participation in the study.

Based on the above-mentioned study, I am required to seek permission at those venues where cricket clubs are housed e.g.: Kingsmead. Therefore I would like to request tour permission to utilize any municipal venue that houses a cricket club within the confines of the greater Durban Area.

Yours in anticipation,

Rory Tychsen **Dr. G. Haswell**

(Chiropractic Intern) (Supervisor)

I (name) _______________________ hereby give Rory Tychsen consent to conduct the above-mentioned research at any Municipal venue housing a cricket club.
Signature: _______________________ Date: __________

APPENDIX G3 - Letter of Permission to the KZN Cricket Union

To Whom It May Concern:

My name is Rory Tychsen; I am currently doing my Masters Degree in Chiropractic at the Durban University of Technology,

The title of my research project is:
A Profile of Injuries and Contributing Factors in Premier League Cricket Players in the Greater Durban Area.

Name of supervisor:	Dr. G. Haswell (031- 563 4451) M.Tech: Chiropractic
Name of Research Student:	Rory Tychsen (031-373 2512)
Name of Institution:	Durban University of Technology

The purpose of the study:
This study will involve research on competitive cricketers and coaches in the greater Durban area to determine the factors influencing the occurrence of cricket injuries and there management in KwaZulu-Natal.

Procedures:
The cricketers and there coach will be required to complete a questionnaire about cricket injuries, where and how they occur, and there management. The average time for cricketer and coach to complete the questionnaire will be 15 – 30 minutes.

Benefits:
Should they be suffering from any injuries during the course of their participation in this research, they are offered 1 optional free treatment at the Chiropractic Day Clinic at the Durban University of Technology. Also the results of this research will be forwarded to you as the Club leader of your cricket club to allow for improved recommendations with regard to training.

Cost:
There is no cost involved from your participation in the study.

Based on the above-mentioned study, I am required to seek permission at those venues where cricket clubs are housed e.g.: Kingsmead. Therefore I would like to request tour permission to utilize any municipal venue that houses a cricket club within the confines of the greater Durban Area.

Yours in anticipation,

Rory Tychsen **Dr. G. Haswell**

(Chiropractic Intern) (Supervisor)

I (name) ______________________ hereby give Rory Tychsen consent to conduct the above-mentioned research at any Municipal venue housing a cricket club.
Signature: ______________________ Date: __________

<u>APPENDIX H</u> - A Profile of Injuries and Contributing Factors in Premier League Cricket Players in the Greater Durban Area.

Sections 1 to 5 are for cricket players only. Section 6 is for coaches only.
Please tick/cross the appropriate box, unless otherwise stated.

Section 1: Player Information

1. Age	yrs			
2. Ethnicity (for statistical purposes)				
Black	White	Coloured	Asian	Indian
3. Height (cm)	cm			
4. Weight (kg)	kg			
5. Name of the club you play for?				
6. Do you have medical aid?	Yes			
	No			

Section 2: Cricket history

7. At what age did you start to play cricket competitively? (i.e. for school/club)	yrs	
8. For how many years have you played cricket?	yrs	
9. Presently, how many hours do you train for … in a week?	Batting	hrs
	Bowling	hrs
	Fielding	hrs
	Total	hrs
10. What is/are your main role(s) in the team? (you may choose more than one)	Fast/Medium bowler	
	Slow/Spin bowler	
	Top order (1-3) batsman	
	Middle order (4-6) batsman	
	Wicket-keeper	
	Fielder (specify position):	
11. On average, how many hours of gym work do you do for cricket per week?	hrs	
12. Did you do any pre-season training for cricket?	Yes	
	No	(If no, go to Q.14)
13. If yes to Q.12, how long was it? (specify)	months	
	weeks	
14. How long is/was your season?	months	
	weeks	

Section 3: Cricket injuries

15. Have you sustained any injury/ies in the past season due to cricket?		
	Yes	(If yes, proceed to Q.16)
	No	(If no, proceed to Section 4, Q.23)

Body Area	16.1 Current injury?	16.2 Previous injury?	17. Indicate the worst injury?	18. During which activity did it occur?					19. Form of cricket?			20. Severity?			21. What effect did it have on you playing cricket?			22. How long did it prevent you from playing cricket cricket?		
				Bowling	Batting	Fielding	Wicket-keeping	Other (specify):	T20	45	60	Mild	Moderate	Severe	Prevented	Limited	No effect	Less than 3 weeks	3 - 6 weeks	Greater than 6 weeks
A. Foot/Toes																				
B. Ankle																				
C. Achilles tendon																				
D. Leg/Calf																				
E. Knee																				
F. Hamstring (back of leg)																				
G. Quadriceps (front of leg)																				
H. Hip/Groin																				
I. Lower back																				
J. Upper back																				
K. Neck																				
L. Head																				
M. Shoulder																				
N. Biceps (front of upper arm)																				
O. Triceps (back of upper arm)																				
P. Elbow																				
Q. Forearm																				
R. Wrist																				
S. Hand/Finger																				
T. Other (specify):																				

Section 4:Knowledge and perception

23. On the list below please tick those practitioners that you have consulted for treatment for your cricket injuries?		**24. Rank all the practitioners below on whether or not you would consult them for any cricket injury?** Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
Biokineticist		1	2	3	4	5
Chiropractor		1	2	3	4	5
General practitioner		1	2	3	4	5
Homoeopath		1	2	3	4	5
Massage therapist		1	2	3	4	5
Neurologist		1	2	3	4	5
Orthopaedic surgeon		1	2	3	4	5
Physiotherapist		1	2	3	4	5
Other (specify):		1	2	3	4	5

Section 5: Resources

25. How would you rate those facilities available at your club? (Choose only those facilities available at your club from the list below).

	Very Poor	Poor	Average	Good	Very Good
Cricket field	1	2	3	4	5
Cricket nets – concrete	1	2	3	4	5
Cricket nets – turf	1	2	3	4	5
cricket nets – indoor	1	2	3	4	5
Gym	1	2	3	4	5
Pool	1	2	3	4	5
Other (specify):	1	2	3	4	5

26. What equipment does your club have?

Batting equipment	
Bowling machine	
Cricket balls	
Wicket-keeping equipment	
Other (specify):	

27. Does your club supply any protective equipment?	Yes	
	No	(If no, go to Q.30)

28. If yes, what protective equipment is supplied?

Arm guards	
Batting helmets	
Batting pads	
Chest guards	
Box (groin)	
Thigh guards	
Wicket-keeping gloves and pads	
Other (specify):	

Section 6: Coaches information, Training and Management (For coaches only)			
29. Age	Yrs		
30. Which club do you coach for?			
31. How many years have you coached cricket?	Yrs		
32. How many years have you coached premier league cricket?	Yrs		
33. Do you have any form of coaching qualification(s)?	Yes	No	
34. If yes, what qualification(s) do you have?	>		
35. At what level of cricket have you coached?	Primary school		Provincial level
	High school		National level
	Club level		
36. What training has been done?	General fitness		
	Endurance training		
	Speed training		
	Strength training		
	Skills training		
	Other (specify):		
	None		
37. Was this training supervised by you (the coach)?	Yes	No	
38. Are you the permanent coach of the side?	Yes	No	
39. Is there first aid provided at all matches?	Yes, all matches		
	Yes, some matches		
	No		
	Don't know		
40. Is there any medical staff involved with the team?	Yes	No	Don't know
	(If no, go to Q. 43		
41. If yes, who does the medical staff consist of?	Chiropractor		
	Physiotherapist		
	Medical doctor (GP)		
	Biokineticist		
	Personal trainer		
	Other (specify):		
42. How would you describe the quality of the medical staff?	Good	Average	Bad
43. Does the team have a sponsor?	Yes	No	
44. If yes, what does the sponsorship entail?			
Money		Cricket balls	
Protective equipment		Cones	
Playing kit		Supplements	
Practise kit		Other (specify):	
Batting equipment			

Do you wish to receive an abstract of the results of this research once it is completed?

Yes	No

If yes, please write down your email address:………………………………………………………

<u>Thank you for participating in my research.</u>

APPENDIX K – Statistical analysis of current injury descriptors

K1: Association between current Injury descriptors and Foot / Toes injury											
		a. Foot / Toes						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst Injury?	N/A	0	.0%	93	92.1%	93	92.1%			
	Yes	1	1.0%	1	1.0%	2	2.0%	.000	1	1.000
	No	3	3.0%	3	3.0%	6	5.9%			
Activity of cricket?	N/A	0	.0%	93	92.1%	93	92.1%			
	Bowling	4	4.0%	3	3.0%	7	6.9%	1.143	1	.285
	Batting	0	.0%	0	.0%	0	.0%			
	Fielding	0	.0%	1	1.0%	1	1.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	93	92.1%	93	92.1%			
	T20	2	2.0%	1	1.0%	3	3.0%	.667	2	.717
	45	1	1.0%	1	1.0%	2	2.0%			
	60	1	1.0%	2	2.0%	3	3.0%			
Severity?	N/A	0	.0%	93	92.1%	93	92.1%			
	Mild	1	1.0%	2	2.0%	3	3.0%	2.333	2	.311
	Moderate	3	3.0%	1	1.0%	4	4.0%			
	Severe	0	.0%	1	1.0%	1	1.0%			
Effect on cricket?	N/A	0	.0%	93	92.1%	93	92.1%			
	Prevented	0	.0%	0	.0%	0	.0%	1.143	1	.285
	Limited	4	4.0%	3	3.0%	7	6.9%			
	No effect	0	.0%	1	1.0%	1	1.0%			
Time out of play?	N/A	0	.0%	93	92.1%	93	92.1%			
	< 3 weeks-acute	2	2.0%	3	3.0%	5	5.0%	3.200	2	.202
	3-6 weeks - sub-acute	2	2.0%	0	.0%	2	2.0%			
	> 6 weeks-chronic	0	.0%	1	1.0%	1	1.0%			

Table K2: Association between current Injury descriptors and Ankle injury										
		b. Ankle						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	90	89.1%	90	89.1%			
	Yes	5	5.0%	2	2.0%	7	6.9%	2.213	1	.137
	No	1	1.0%	3	3.0%	4	4.0%			
Activity of cricket?	N/A	0	.0%	90	89.1%	90	89.1%			
	Bowling	4	4.0%	3	3.0%	7	6.9%	2.069	3	.558
	Batting	0	.0%	1	1.0%	1	1.0%			
	Fielding	1	1.0%	1	1.0%	2	2.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	1	1.0%	0	.0%	1	1.0%			
Form of cricket?	N/A	0	.0%	90	89.1%	90	89.1%			
	T20	1	1.0%	0	.0%	1	1.0%	.917	2	.632
	45	2	2.0%	2	2.0%	4	4.0%			
	60	3	3.0%	3	3.0%	6	5.9%			
Effect on cricket?	N/A	0	.0%	90	89.1%	90	89.1%			
	Prevented	3	3.0%	2	2.0%	5	5.0%	1.320	2	.517
	Limited	3	3.0%	2	2.0%	5	5.0%			
	No effect	0	.0%	1	1.0%	1	1.0%			
Time out of play?	N/A	1	1.0%	90	89.1%	91	90.1%			
	< 3 weeks-acute	3	3.0%	3	3.0%	6	5.9%	.000	2	1.000
	3-6 weeks - sub-acute	1	1.0%	1	1.0%	2	2.0%			
	> 6 weeks-chronic	1	1.0%	1	1.0%	2	2.0%			

Table K3 : Association between current injury descriptors and Achilles Tendon injury										
		c. Achilles tendon						Chi Square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	100	99.0%	100	99.0%			
	Yes	0	.0%	1	1.0%	1	1.0%			
	No	0	.0%	0	.0%	0	.0%			
Activity of cricket?	N/A	0	.0%	100	99.0%	100	99.0%			
	Bowling	0	.0%	1	1.0%	1	1.0%			
	Batting	0	.0%	0	.0%	0	.0%			
	Fielding	0	.0%	0	.0%	0	.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	100	99.0%	100	99.0%			
	T20	0	.0%	0	.0%	0	.0%			
	45	0	.0%	1	1.0%	1	1.0%			
	60	0	.0%	0	.0%	0	.0%			
Severity?	N/A	0	.0%	100	99.0%	100	99.0%			
	Mild	0	.0%	1	1.0%	1	1.0%			
	Moderate	0	.0%	0	.0%	0	.0%			
	Severe	0	.0%	0	.0%	0	.0%			
Effect on playing cricket?	N/A	0	.0%	100	99.0%	100	99.0%			
	Prevented	0	.0%	1	1.0%	1	1.0%			
	Limited	0	.0%	0	.0%	0	.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of play?	N/A	0	.0%	100	99.0%	100	99.0%			
	< 3 weeks-acute	0	.0%	1	1.0%	1	1.0%			
	3-6 weeks-subacute	0	.0%	0	.0%	0	.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

Table K3 reflects that there were no current Achilles tendon injuries.

Table K4: Association between current Injury descriptors and Leg / Calf injury										
		d. Leg / Calf						**Chi square**	**df**	***p***
		Yes		**No**		**Total**				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	97	96.0%	97	96.0%			
	Yes	1	1.0%	1	1.0%	2	2.0%	.000	1	1.000
	No	1	1.0%	1	1.0%	2	2.0%			
Activity of cricket?	N/A	0	.0%	97	96.0%	97	96.0%			
	Bowling	0	.0%	1	1.0%	1	1.0%	4.000	2	.135
	Batting	0	.0%	1	1.0%	1	1.0%			
	Fielding	0	.0%	0	.0%	0	.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	2	2.0%	0	.0%	2	2.0%			
Form of cricket?	N/A	0	.0%	97	96.0%	97	96.0%			
	0	1	1.0%	0	.0%	1	1.0%	1.333	1	.248
	T20	0	.0%	0	.0%	0	.0%			
	45	1	1.0%	2	2.0%	3	3.0%			
	60	0	.0%	0	.0%	0	.0%			
Severity?	N/A	0	.0%	97	96.0%	97	96.0%			
	Mild	2	2.0%	0	.0%	2	2.0%	4.000	2	.135
	Moderate	0	.0%	1	1.0%	1	1.0%			
	Severe	0	.0%	1	1.0%	1	1.0%			
Effect on playing cricket?	N/A	0	.0%	97	96.0%	97	96.0%			
	Prevented	0	.0%	1	1.0%	1	1.0%	4.000	2	.135
	Limited	0	.0%	1	1.0%	1	1.0%			
	No effect	2	2.0%	0	.0%	2	2.0%			
Time out of play?	N/A	0	.0%	97	96.0%	97	96.0%			
	< 3 weeks-acute	2	2.0%	1	1.0%	3	3.0%	1.333	1	.248
	3-6 weeks-sub acute	0	.0%	0	.0%	0	.0%			
	> 6 weeks-chronic	0	.0%	1	1.0%	1	1.0%			

Table K5: Association between current Injury descriptors and Knee injury										
		e. Knee						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	88	87.1%	88	87.1%			
	Yes	2	2.0%	2	2.0%	4	4.0%	.034	1	.853
	No	4	4.0%	5	5.0%	9	8.9%			
Activity of cricket?	N/A	0	.0%	88	87.1%	88	87.1%			
	Bowling	0	.0%	2	2.0%	2	2.0%	4.282	3	.233
	Batting	1	1.0%	2	2.0%	3	3.0%			
	Fielding	3	3.0%	3	3.0%	6	5.9%			
	Wicket keeping	2	2.0%	0	.0%	2	2.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	88	87.1%	88	87.1%			
	T20	0	.0%	2	2.0%	2	2.0%	2.078	2	.354
	45	2	2.0%	2	2.0%	4	4.0%			
	60	4	4.0%	3	3.0%	7	6.9%			
Severity?	N/A	0	.0%	88	87.1%	88	87.1%			
	Mild	2	2.0%	1	1.0%	3	3.0%	.660	2	.719
	Moderate	2	2.0%	3	3.0%	5	5.0%			
	Severe	2	2.0%	3	3.0%	5	5.0%			
Effect on playing cricket?	N/A	0	.0%	88	87.1%	88	87.1%			
	Prevented	2	2.0%	3	3.0%	5	5.0%	2.806	2	.246
	Limited	2	2.0%	4	4.0%	6	5.9%			
	No effect	2	2.0%	0	.0%	2	2.0%			
Time out of play?	N/A	0	.0%	88	87.1%	88	87.1%			
	< 3 weeks-acute	4	4.0%	2	2.0%	6	5.9%	2.404	2	.301
	3-6 weeks - sub-acute	1	1.0%	1	1.0%	2	2.0%			
	> 6 weeks-chronic	1	1.0%	4	4.0%	5	5.0%			

Table K6: Association between current injury descriptors and Hamstring injury										
		f. Hamstring (back of leg)						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	100	99.0%	100	99.0%			
	Yes	0	.0%	0	.0%	0	.0%			
	No	0	.0%	1	1.0%	1	1.0%			
Activity of cricket?	N/A	0	.0%	100	99.0%	100	99.0%			
	Bowling	0	.0%	1	1.0%	1	1.0%			
	Batting	0	.0%	0	.0%	0	.0%			
	Fielding	0	.0%	0	.0%	0	.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	100	99.0%	100	99.0%			
	T20	0	.0%	0	.0%	0	.0%			
	45	0	.0%	0	.0%	0	.0%			
	60	0	.0%	1	1.0%	1	1.0%			
Severity?	N/A	0	.0%	100	99.0%	100	99.0%			
	Mild	0	.0%	1	1.0%	1	1.0%			
	Moderate	0	.0%	0	.0%	0	.0%			
	Severe	0	.0%	0	.0%	0	.0%			
Effect on playing cricket?	N/A	0	.0%	100	99.0%	100	99.0%			
	Prevented	0	.0%	0	.0%	0	.0%			
	Limited	0	.0%	1	1.0%	1	1.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of cricket?	N/A	0	.0%	100	99.0%	100	99.0%			
	< 3 weeks-acute	0	.0%	1	1.0%	1	1.0%			
	3-6 weeks-subacute	0	.0%	0	.0%	0	.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

From Table K6 we can see that there were no current hamstring injuries.

Table K7: Association between current Injury descriptors and Quadriceps injury										
		g. Quadriceps (front of leg)						**Chi square**	**df**	***p***
		Yes		**No**		**Total**				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	98	97.0%	98	97.0%			
	Yes	0	.0%	0	.0%	0	.0%			
	No	2	2.0%	1	1.0%	3	3.0%			
Activity of cricket?	N/A	0	.0%	98	97.0%	98	97.0%			
	Bowling	1	1.0%	0	.0%	1	1.0%	3.000	2	.223
	Batting	0	.0%	1	1.0%	1	1.0%			
	Fielding	1	1.0%	0	.0%	1	1.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	98	97.0%	98	97.0%			
	T20	0	.0%	1	1.0%	1	1.0%	3.000	2	.223
	45	1	1.0%	0	.0%	1	1.0%			
	60	1	1.0%	0	.0%	1	1.0%			
Severity?	N/A	0	.0%	98	97.0%	98	97.0%			
	Mild	2	2.0%	1	1.0%	3	3.0%			
	Moderate	0	.0%	0	.0%	0	.0%			
	Severe	0	.0%	0	.0%	0	.0%			
Effect on playing cricket?	N/A	0	.0%	98	97.0%	98	97.0%			
	Prevented	0	.0%	0	.0%	0	.0%			
	Limited	2	2.0%	1	1.0%	3	3.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of play?	N/A	0	.0%	98	97.0%	98	97.0%			
	< 3 weeks-acute	2	2.0%	1	1.0%	3	3.0%			
	3-6 weeks - sub-acute	0	.0%	0	.0%	0	.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

Table K8: Association between current Injury descriptors and Hip / Groin injury										
		h. Hip / Groin						Chi Square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	96	95.0%	96	95.0%			
	Yes	3	3.0%	1	1.0%	4	4.0%	1.875	1	.171
	No	0	.0%	1	1.0%	1	1.0%			
Activity of cricket?	N/A	0	.0%	96	95.0%	96	95.0%			
	Bowling	2	2.0%	0	.0%	2	2.0%	5.000	3	.172
	Batting	0	.0%	1	1.0%	1	1.0%			
	Fielding	0	.0%	1	1.0%	1	1.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	1	1.0%	0	.0%	1	1.0%			
Form of cricket?	N/A	0	.0%	96	95.0%	96	95.0%			
	0	1	1.0%	0	.0%	1	1.0%	2.222	2	.329
	T20	0	.0%	0	.0%	0	.0%			
	45	0	.0%	1	1.0%	1	1.0%			
	60	2	2.0%	1	1.0%	3	3.0%			
Severity?	N/A	0	.0%	96	95.0%	96	95.0%			
	Mild	1	1.0%	1	1.0%	2	2.0%	.833	2	.659
	Moderate	1	1.0%	1	1.0%	2	2.0%			
	Severe	1	1.0%	0	.0%	1	1.0%			
Effect on playing cricket?	N/A	0	.0%	96	95.0%	96	95.0%			
	Prevented	0	.0%	1	1.0%	1	1.0%	1.875	1	.171
	Limited	3	3.0%	1	1.0%	4	4.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of play?	N/A	0	.0%	96	95.0%	96	95.0%			
	< 3 weeks-acute	2	2.0%	1	1.0%	3	3.0%	2.222	2	.329
	3-6 weeks - sub-acute	0	.0%	1	1.0%	1	1.0%			
	> 6 weeks-chronic	1	1.0%	0	.0%	1	1.0%			

Table K9: Association between current Injury descriptors and Lower Back Injury										
		i. Lower Back						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst Injury?	N/A	0	.0%	80	79.2%	80	79.2%			
	Yes	9	8.9%	5	5.0%	14	13.9%	2.431	2	.297
	No	2	2.0%	4	4.0%	6	5.9%			
	3	1	1.0%	0	.0%	1	1.0%			
Activity of cricket?	N/A	0	.0%	80	79.2%	80	79.2%			
	Bowling	9	8.9%	7	6.9%	16	15.8%	.839	2	.658
	Batting	2	2.0%	2	2.0%	4	4.0%			
	Fielding	1	1.0%	0	.0%	1	1.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	80	79.2%	80	79.2%			
	T20	1	1.0%	0	.0%	1	1.0%	6.067	3	.108
	45	1	1.0%	4	4.0%	5	5.0%			
	60	10	9.9%	4	4.0%	14	13.9%			
	4	0	.0%	1	1.0%	1	1.0%			
Severity?	N/A	0	.0%	80	79.2%	80	79.2%			
	Mild	4	4.0%	0	.0%	4	4.0%	3.850	2	.146
	Moderate	6	5.9%	6	5.9%	12	11.9%			
	Severe	2	2.0%	3	3.0%	5	5.0%			
Effect on playing cricket?	N/A	0	.0%	80	79.2%	80	79.2%			
	Prevented	2	2.0%	2	2.0%	4	4.0%	.194	2	.907
	Limited	8	7.9%	6	5.9%	14	13.9%			
	No effect	2	2.0%	1	1.0%	3	3.0%			
Time out of play?	N/A	0	.0%	80	79.2%	80	79.2%			
	< 3 weeks-acute	7	6.9%	5	5.0%	12	11.9%	.049	2	.976
	3-6 weeks - sub-acute	4	4.0%	3	3.0%	7	6.9%			
	> 6 weeks-chronic	1	1.0%	1	1.0%	2	2.0%			

Table K10: Association between current injury descriptors and Upper Back injury										
		j. Upper back						Chi square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	101	100.0%	101	100.0%			
	Yes	0	.0%	0	.0%	0	.0%			
	No	0	.0%	0	.0%	0	.0%			
Activity of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Bowling	0	.0%	0	.0%	0	.0%			
	Batting	0	.0%	0	.0%	0	.0%			
	Fielding	0	.0%	0	.0%	0	.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	T20	0	.0%	0	.0%	0	.0%			
	45	0	.0%	0	.0%	0	.0%			
	60	0	.0%	0	.0%	0	.0%			
Severity?	N/A	0	.0%	101	100.0%	101	100.0%			
	Mild	0	.0%	0	.0%	0	.0%			
	Moderate	0	.0%	0	.0%	0	.0%			
	Severe	0	.0%	0	.0%	0	.0%			
Effect on playing cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Prevented	0	.0%	0	.0%	0	.0%			
	Limited	0	.0%	0	.0%	0	.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	< 3 weeks-acute	0	.0%	0	.0%	0	.0%			
	3-6 weeks-subacute	0	.0%	0	.0%	0	.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

There were no current upper back injuries.

Table K11: Association between current injury descriptors and Neck injury										
		k. Neck						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	101	100.0%	101	100.0%			
	Yes	0	.0%	0	.0%	0	.0%			
	No	0	.0%	0	.0%	0	.0%			
Activity of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Bowling	0	.0%	0	.0%	0	.0%			
	Batting	0	.0%	0	.0%	0	.0%			
	Fielding	0	.0%	0	.0%	0	.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	T20	0	.0%	0	.0%	0	.0%			
	45	0	.0%	0	.0%	0	.0%			
	60	0	.0%	0	.0%	0	.0%			
Severity?	N/A	0	.0%	101	100.0%	101	100.0%			
	Mild	0	.0%	0	.0%	0	.0%			
	Moderate	0	.0%	0	.0%	0	.0%			
	Severe	0	.0%	0	.0%	0	.0%			
Effect on cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Prevented	0	.0%	0	.0%	0	.0%			
	Limited	0	.0%	0	.0%	0	.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	< 3 weeks-acute	0	.0%	0	.0%	0	.0%			
	3-6 weeks-subacute	0	.0%	0	.0%	0	.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

There was no current neck injuries reported.

Table K12: Association between current injury descriptors and Head injury										
		I. Head						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	101	100.0%	101	100.0%			
	Yes	0	.0%	0	.0%	0	.0%			
	No	0	.0%	0	.0%	0	.0%			
Activity of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Bowling	0	.0%	0	.0%	0	.0%			
	Batting	0	.0%	0	.0%	0	.0%			
	Fielding	0	.0%	0	.0%	0	.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	T20	0	.0%	0	.0%	0	.0%			
	45	0	.0%	0	.0%	0	.0%			
	60	0	.0%	0	.0%	0	.0%			
Severity?	N/A	0	.0%	101	100.0%	101	100.0%			
	Mild	0	.0%	0	.0%	0	.0%			
	Moderate	0	.0%	0	.0%	0	.0%			
	Severe	0	.0%	0	.0%	0	.0%			
Effect on playing cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Prevented	0	.0%	0	.0%	0	.0%			
	Limited	0	.0%	0	.0%	0	.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	< 3 weeks-acute	0	.0%	0	.0%	0	.0%			
	3-6 weeks-subacute	0	.0%	0	.0%	0	.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

No current head injuries were reported.

Table K13: Association between current Injury descriptors and Shoulder injury										
		m. Shoulder						Chi Square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	94	93.1%	94	93.1%			
	Yes	1	1.0%	0	.0%	1	1.0%	.875	1	.350
	No	3	3.0%	3	3.0%	6	5.9%			
Activity of cricket?	N/A	0	.0%	94	93.1%	94	93.1%			
	Bowling	3	3.0%	1	1.0%	4	4.0%	1.215	1	.270
	Batting	0	.0%	0	.0%	0	.0%			
	Fielding	1	1.0%	2	2.0%	3	3.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	94	93.1%	94	93.1%			
	T20	0	.0%	0	.0%	0	.0%	2.100	1	.147
	45	2	2.0%	0	.0%	2	2.0%			
	60	2	2.0%	3	3.0%	5	5.0%			
Effect on playing cricket?	N/A	0	.0%	94	93.1%	94	93.1%			
	Prevented	1	1.0%	0	.0%	1	1.0%	2.100	2	.350
	Limited	3	3.0%	2	2.0%	5	5.0%			
	No effect	0	.0%	1	1.0%	1	1.0%			
Time out of play?	N/A	0	.0%	94	93.1%	94	93.1%	.875	1	.350
	< 3 weeks-acute	3	3.0%	3	3.0%	6	5.9%			
	3-6 weeks - sub-acute	1	1.0%	0	.0%	1	1.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

Table K14: Association between current injury descriptors and Biceps injury										
		n. Biceps (front of upper arm)						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	101	100.0%	101	100.0%			
	Yes	0	.0%	0	.0%	0	.0%			
	No	0	.0%	0	.0%	0	.0%			
Activity of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Bowling	0	.0%	0	.0%	0	.0%			
	Batting	0	.0%	0	.0%	0	.0%			
	Fielding	0	.0%	0	.0%	0	.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	T20	0	.0%	0	.0%	0	.0%			
	45	0	.0%	0	.0%	0	.0%			
	60	0	.0%	0	.0%	0	.0%			
Severity?	N/A	0	.0%	101	100.0%	101	100.0%			
	Mild	0	.0%	0	.0%	0	.0%			
	Moderate	0	.0%	0	.0%	0	.0%			
	Severe	0	.0%	0	.0%	0	.0%			
Effect on playing cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Prevented	0	.0%	0	.0%	0	.0%			
	Limited	0	.0%	0	.0%	0	.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	< 3 weeks-acute	0	.0%	0	.0%	0	.0%			
	3-6 weeks-subacute	0	.0%	0	.0%	0	.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

No current biceps injuries were reported.

Table K15: Association between current injury descriptors and Triceps injury										
		o. Triceps (back of upper arm)						Chi Square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	101	100.0%	101	100.0%			
	Yes	0	.0%	0	.0%	0	.0%			
	No	0	.0%	0	.0%	0	.0%			
Activity of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Bowling	0	.0%	0	.0%	0	.0%			
	Batting	0	.0%	0	.0%	0	.0%			
	Fielding	0	.0%	0	.0%	0	.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	T20	0	.0%	0	.0%	0	.0%			
	45	0	.0%	0	.0%	0	.0%			
	60	0	.0%	0	.0%	0	.0%			
Severity?	N/A	0	.0%	101	100.0%	101	100.0%			
	Mild	0	.0%	0	.0%	0	.0%			
	Moderate	0	.0%	0	.0%	0	.0%			
	Severe	0	.0%	0	.0%	0	.0%			
Effect on playing cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Prevented	0	.0%	0	.0%	0	.0%			
	Limited	0	.0%	0	.0%	0	.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	< 3 weeks-acute	0	.0%	0	.0%	0	.0%			
	3-6 weeks-subacute	0	.0%	0	.0%	0	.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

No current triceps injuries were reported.

Table K16: Association between current Injury descriptors and Elbow Injury										
		p. Elbow						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	99	98.0%	99	98.0%			
	Yes	0	.0%	1	1.0%	1	1.0%	2.000	1	.157
	No	1	1.0%	0	.0%	1	1.0%			
Activity of cricket?	N/A	0	.0%	99	98.0%	99	98.0%			
	Bowling	0	.0%	0	.0%	0	.0%	2.000	1	.157
	Batting	0	.0%	1	1.0%	1	1.0%			
	Fielding	1	1.0%	0	.0%	1	1.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	99	98.0%	99	98.0%			
	T20	0	.0%	0	.0%	0	.0%	2.000	1	.157
	45	0	.0%	1	1.0%	1	1.0%			
	60	1	1.0%	0	.0%	1	1.0%			
Severity?	N/A	0	.0%	99	98.0%	99	98.0%			
	Mild	0	.0%	0	.0%	0	.0%	2.000	1	.157
	Moderate	0	.0%	1	1.0%	1	1.0%			
	Severe	1	1.0%	0	.0%	1	1.0%			
Effect on playing cricket?	N/A	0	.0%	99	98.0%	99	98.0%			
	Prevented	1	1.0%	0	.0%	1	1.0%	2.000	1	.157
	Limited	0	.0%	1	1.0%	1	1.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of play?	N/A	0	.0%	99	98.0%	99	98.0%			
	< 3 weeks-acute	1	1.0%	0	.0%	1	1.0%	2.000	1	.157
	3-6 weeks - sub-acute	0	.0%	1	1.0%	1	1.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

Table K17: Association between current injury descriptors and Forearm injury											
		q. Forearm						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst Injury?	N/A	0	.0%	101	100.0%	101	100.0%			
	Yes	0	.0%	0	.0%	0	.0%			
	No	0	.0%	0	.0%	0	.0%			
Activity of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Bowling	0	.0%	0	.0%	0	.0%			
	Batting	0	.0%	0	.0%	0	.0%			
	Fielding	0	.0%	0	.0%	0	.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	T20	0	.0%	0	.0%	0	.0%			
	45	0	.0%	0	.0%	0	.0%			
	60	0	.0%	0	.0%	0	.0%			
Severity?	N/A	0	.0%	101	100.0%	101	100.0%			
	Mild	0	.0%	0	.0%	0	.0%			
	Moderate	0	.0%	0	.0%	0	.0%			
	Severe	0	.0%	0	.0%	0	.0%			
Effect on playing cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Prevented	0	.0%	0	.0%	0	.0%			
	Limited	0	.0%	0	.0%	0	.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	< 3 weeks-acute	0	.0%	0	.0%	0	.0%			
	3-6 weeks-subacute	0	.0%	0	.0%	0	.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

No current forearm injuries were reported.

Table K18: Association between current injury descriptors and Wrist injury											
		r. Wrist						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	101	100.0%	101	100.0%			
	Yes	0	.0%	0	.0%	0	.0%			
	No	0	.0%	0	.0%	0	.0%			
Activity of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Bowling	0	.0%	0	.0%	0	.0%			
	Batting	0	.0%	0	.0%	0	.0%			
	Fielding	0	.0%	0	.0%	0	.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	T20	0	.0%	0	.0%	0	.0%			
	45	0	.0%	0	.0%	0	.0%			
	60	0	.0%	0	.0%	0	.0%			
Severity?	N/A	0	.0%	101	100.0%	101	100.0%			
	Mild	0	.0%	0	.0%	0	.0%			
	Moderate	0	.0%	0	.0%	0	.0%			
	Severe	0	.0%	0	.0%	0	.0%			
Effect on playing cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	Prevented	0	.0%	0	.0%	0	.0%			
	Limited	0	.0%	0	.0%	0	.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of cricket?	N/A	0	.0%	101	100.0%	101	100.0%			
	< 3 weeks-acute	0	.0%	0	.0%	0	.0%			
	3-6 weeks-subacute	0	.0%	0	.0%	0	.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

No current wrist injuries were reported.

Table K19: Association between current injury descriptors and Hand / Finger injury										
		s. Hand / Finger						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	92	91.1%	92	91.1%			
	Yes	0	.0%	2	2.0%	2	2.0%	1.286	1	.257
	No	3	3.0%	4	4.0%	7	6.9%			
Activity of cricket?	N/A	0	.0%	92	91.1%	92	91.1%			
	Bowling	0	.0%	1	1.0%	1	1.0%	3.000	3	.392
	Batting	0	.0%	2	2.0%	2	2.0%			
	Fielding	2	2.0%	1	1.0%	3	3.0%			
	Wicket keeping	1	1.0%	2	2.0%	3	3.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	92	91.1%	92	91.1%			
	T20	0	.0%	1	1.0%	1	1.0%	.600	2	.741
	45	1	1.0%	2	2.0%	3	3.0%			
	60	2	2.0%	3	3.0%	5	5.0%			
Severity?	N/A	0	.0%	92	91.1%	92	91.1%			
	Mild	1	1.0%	0	.0%	1	1.0%	2.400	2	.301
	Moderate	1	1.0%	4	4.0%	5	5.0%			
	Severe	1	1.0%	2	2.0%	3	3.0%			
Effect on playing cricket?	N/A	0	.0%	92	91.1%	92	91.1%			
	Prevented	0	.0%	2	2.0%	2	2.0%	1.500	2	.472
	Limited	1	1.0%	2	2.0%	3	3.0%			
	No effect	2	2.0%	2	2.0%	4	4.0%			
Time out of play?	N/A	0	.0%	92	91.1%	92	91.1%	1.286	1	.257
	< 3 weeks-acute	3	3.0%	4	4.0%	7	6.9%			
	3-6 weeks - sub-acute	0	.0%	2	2.0%	2	2.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

Table K20: Association between current injury descriptors and 'Other' injury											
		t. Other						Chi Square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.0%	100	99.0%	100	99.0%			
	Yes	0	.0%	0	.0%	0	.0%			
	No	1	1.0%	0	.0%	1	1.0%			
Activity of cricket?	N/A	0	.0%	100	99.0%	100	99.0%			
	Bowling	1	1.0%	0	.0%	1	1.0%			
	Batting	0	.0%	0	.0%	0	.0%			
	Fielding	0	.0%	0	.0%	0	.0%			
	Wicket keeping	0	.0%	0	.0%	0	.0%			
	Other	0	.0%	0	.0%	0	.0%			
Form of cricket?	N/A	0	.0%	100	99.0%	100	99.0%			
	T20	1	1.0%	0	.0%	1	1.0%			
	45	0	.0%	0	.0%	0	.0%			
	60	0	.0%	0	.0%	0	.0%			
Severity?	N/A	0	.0%	100	99.0%	100	99.0%			
	Mild	0	.0%	0	.0%	0	.0%			
	Moderate	0	.0%	0	.0%	0	.0%			
	Severe	1	1.0%	0	.0%	1	1.0%			
Effect on playing cricket?	N/A	0	.0%	100	99.0%	100	99.0%			
	Prevented	1	1.0%	0	.0%	1	1.0%			
	Limited	0	.0%	0	.0%	0	.0%			
	No effect	0	.0%	0	.0%	0	.0%			
Time out of play?	N/A	1	1.0%	100	99.0%	101	100.0%			
	< 3 weeks-acute	0	.0%	0	.0%	0	.0%			
	3-6 weeks - sub-acute	0	.0%	0	.0%	0	.0%			
	> 6 weeks-chronic	0	.0%	0	.0%	0	.0%			

APPENDIX L – Statistical analysis of previous injury descriptors

Table L1: Association between previous injury descriptors and Foot / Toes injury										
		a. Foot / Toes						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	93	92.08%	93	92.08%			
	Yes	1	.99%	1	.99%	2	1.98%	.000	1	1.000
	No	3	2.97%	3	2.97%	6	5.94%			
Activity of cricket?	N/A	0	.00%	93	92.08%	93	92.08%			
	Bowling	3	2.97%	4	3.96%	7	6.93%	1.143	1	.285
	Batting	0	.00%	0	.00%	0	.00%			
	Fielding	1	.99%	0	.00%	1	.99%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	93	92.08%	93	92.08%			
	T20	1	.99%	2	1.98%	3	2.97%	.667	2	.717
	45	1	.99%	1	.99%	2	1.98%			
	60	2	1.98%	1	.99%	3	2.97%			
Severity?	N/A	0	.00%	93	92.08%	93	92.08%			
	Mild	2	1.98%	1	.99%	3	2.97%	2.333	2	.311
	Moderate	1	.99%	3	2.97%	4	3.96%			
	Severe	1	.99%	0	.00%	1	.99%			
Effect on playing cricket?	N/A	0	.00%	93	92.08%	93	92.08%			
	Prevented	0	.00%	0	.00%	0	.00%	1.143	1	.285
	Limited	3	2.97%	4	3.96%	7	6.93%			
	No effect	1	.99%	0	.00%	1	.99%			
Time out of cricket?	N/A	0	.00%	93	92.08%	93	92.08%			
	< 3 weeks-acute	3	2.97%	2	1.98%	5	4.95%	3.200	2	.202
	3-6 weeks - sub-acute	0	.00%	2	1.98%	2	1.98%			
	> 6 weeks-chronic	1	.99%	0	.00%	1	.99%			

Table L2: Association between previous injury descriptors and Ankle injury										
		b. Ankle						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	90	89.11%	90	89.11%			
	Yes	3	2.97%	4	3.96%	7	6.93%	1.061	1	.303
	No	3	2.97%	1	.99%	4	3.96%			
Activity of cricket?	N/A	0	.00%	90	89.11%	90	89.11%			
	Bowling	3	2.97%	4	3.96%	7	6.93%	2.069	3	.558
	Batting	1	.99%	0	.00%	1	.99%			
	Fielding	1	.99%	1	.99%	2	1.98%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	1	.99%	0	.00%	1	.99%			
Form of cricket?	N/A	0	.00%	90	89.11%	90	89.11%			
	T20	0	.00%	1	.99%	1	.99%	1.925	2	.382
	45	3	2.97%	1	.99%	4	3.96%			
	60	3	2.97%	3	2.97%	6	5.94%			
Severity?	N/A	0	.00%	90	89.11%	90	89.11%			
	Mild	1	.99%	2	1.98%	3	2.97%	3.471	2	.176
	Moderate	2	1.98%	3	2.97%	5	4.95%			
	Severe	3	2.97%	0	.00%	3	2.97%			
Effect on cricket?	N/A	0	.00%	90	89.11%	90	89.11%			
	Prevented	3	2.97%	2	1.98%	5	4.95%	1.698	2	.428
	Limited	2	1.98%	3	2.97%	5	4.95%			
	No effect	1	.99%	0	.00%	1	.99%			
Time out of cricket?	N/A	0	.00%	91	90.10%	91	90.10%			
	< 3 weeks-acute	4	3.96%	2	1.98%	6	5.94%	.277	2	.871
	3-6 weeks - sub-acute	1	.99%	1	.99%	2	1.98%			
	> 6 weeks-chronic	1	.99%	1	.99%	2	1.98%			

Table L3: Association between previous injury descriptors and Achilles Tendon										
		c. Achilles tendon						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	100	99.01%	100	99.01%			
	Yes	1	.99%	0	.00%	1	.99%			
	No	0	.00%	0	.00%	0	.00%			
Activity of cricket?	N/A	0	.00%	100	99.01%	100	99.01%			
	Bowling	1	.99%	0	.00%	1	.99%			
	Batting	0	.00%	0	.00%	0	.00%			
	Fielding	0	.00%	0	.00%	0	.00%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	100	99.01%	100	99.01%			
	T20	0	.00%	0	.00%	0	.00%			
	45	1	.99%	0	.00%	1	.99%			
	60	0	.00%	0	.00%	0	.00%			
Severity?	N/A	0	.00%	100	99.01%	100	99.01%			
	Mild	1	.99%	0	.00%	1	.99%			
	Moderate	0	.00%	0	.00%	0	.00%			
	Severe	0	.00%	0	.00%	0	.00%			
Effect on cricket?	N/A	0	.00%	100	99.01%	100	99.01%			
	Prevented	1	.99%	0	.00%	1	.99%			
	Limited	0	.00%	0	.00%	0	.00%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	100	99.01%	100	99.01%			
	< 3 weeks-acute	1	.99%	0	.00%	1	.99%			
	3-6 weeks - sub-acute	0	.00%	0	.00%	0	.00%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

Table L4: Association between previous injury descriptors and Leg / Calf injury										
		d. Leg / Calf						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	97	96.04%	97	96.04%			
	Yes	1	.99%	1	.99%	2	1.98%	.000	1	1.00 0
	No	1	.99%	1	.99%	2	1.98%			
Activity of cricket?	N/A	0	.00%	97	96.04%	97	96.04%			
	Bowling	1	.99%	0	.00%	1	.99%	4.000	2	.135
	Batting	1	.99%	0	.00%	1	.99%			
	Fielding	0	.00%	0	.00%	0	.00%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	2	1.98%	2	1.98%			
Form of cricket?	N/A	0	.00%	97	96.04%	97	96.04%			
	0	0	.00%	1	.99%	1	.99%	1.333	1	.248
	T20	0	.00%	0	.00%	0	.00%			
	45	2	1.98%	1	.99%	3	2.97%			
	60	0	.00%	0	.00%	0	.00%			
Severity?	N/A	0	.00%	97	96.04%	97	96.04%			
	Mild	0	.00%	2	1.98%	2	1.98%	4.000	2	.135
	Moderate	1	.99%	0	.00%	1	.99%			
	Severe	1	.99%	0	.00%	1	.99%			
Effect on cricket?	N/A	0	.00%	97	96.04%	97	96.04%w ith			
	Prevented	1	.99%	0	.00%	1	.99%	4.000	2	.135
	Limited	1	.99%	0	.00%	1	.99%			
	No effect	0	.00%	2	1.98%	2	1.98%			
Time out of cricket?	N/A	0	.00%	97	96.04%	97	96.04%			
	< 3 weeks-acute	1	.99%	2	1.98%	3	2.97%	1.333	1	.248
	3-6 weeks - sub-acute	0	.00%	0	.00%	0	.00%			
	> 6 weeks-chronic	1	.99%	0	.00%	1	.99%			

Table L5: Association between previous injury descriptors and Knee injury										
		e. Knee						Chi square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	88	87.13%	88	87.13%			
	Yes	2	1.98%	2	1.98%	4	3.96%	.325	1	.569
	No	6	5.94%	3	2.97%	9	8.91%			
Activity of cricket?	N/A	0	.00%	88	87.13%	88	87.13%			
	Bowling	2	1.98%	0	.00%	2	1.98%	1.733	3	.630
	Batting	2	1.98%	1	.99%	3	2.97%			
	Fielding	3	2.97%	3	2.97%	6	5.94%			
	Wicket keeping	1	.99%	1	.99%	2	1.98%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	88	87.13%	88	87.13%			
	T20	2	1.98%	0	.00%	2	1.98%	1.532	2	.465
	45	2	1.98%	2	1.98%	4	3.96%			
	60	4	3.96%	3	2.97%	7	6.93%			
Severity?	N/A	0	.00%	88	87.13%	88	87.13%			
	Mild	2	1.98%	1	.99%	3	2.97%	.043	2	.979
	Moderate	3	2.97%	2	1.98%	5	4.95%			
	Severe	3	2.97%	2	1.98%	5	4.95%			
Effect on cricket?	N/A	0	.00%	88	87.13%	88	87.13%			
	Prevented	3	2.97%	2	1.98%	5	4.95%	4.409	2	.110
	Limited	5	4.95%	1	.99%	6	5.94%			
	No effect	0	.00%	2	1.98%	2	1.98%			
Time out of cricket?	N/A	0	.00%	88	87.13%	88	87.13%			
	< 3 weeks-acute	3	2.97%	3	2.97%	6	5.94%	1.170	2	.557
	3-6 weeks - sub-acute	1	.99%	1	.99%	2	1.98%			
	> 6 weeks-chronic	4	3.96%	1	.99%	5	4.95%			

Table L6: Association between previous injury descriptors and Hamstring injury										
		f. Hamstring (back of leg)						Chi square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	100	99.01%	100	99.01%			
	Yes	0	.00%	0	.00%	0	.00%			
	No	1	.99%	0	.00%	1	.99%			
Activity of cricket?	N/A	0	.00%	100	99.01%	100	99.01%			
	Bowling	1	.99%	0	.00%	1	.99%			
	Batting	0	.00%	0	.00%	0	.00%			
	Fielding	0	.00%	0	.00%	0	.00%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	100	99.01%	100	99.01%			
	T20	0	.00%	0	.00%	0	.00%			
	45	0	.00%	0	.00%	0	.00%			
	60	1	.99%	0	.00%	1	.99%			
Severity?	N/A	0	.00%	100	99.01%	100	99.01%			
	Mild	1	.99%	0	.00%	1	.99%			
	Moderate	0	.00%	0	.00%	0	.00%			
	Severe	0	.00%	0	.00%	0	.00%			
Effect on cricket?	N/A	0	.00%	100	99.01%	100	99.01%			
	Prevented	0	.00%	0	.00%	0	.00%			
	Limited	1	.99%	0	.00%	1	.99%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	100	99.01%	100	99.01%			
	< 3 weeks-acute	1	.99%	0	.00%	1	.99%			
	3-6 weeks - sub-acute	0	.00%	0	.00%	0	.00%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

Table L7: Association between previous injury descriptors and Quadriceps injury											
		g. Quadriceps (front of leg)						Chi square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	98	97.03%	98	97.03%			
	Yes	0	.00%	0	.00%	0	.00%			
	No	1	.99%	2	1.98%	3	2.97%			
Activity of cricket?	N/A	0	.00%	98	97.03%	98	97.03%			
	Bowling	0	.00%	1	.99%	1	.99%	3.000	2	.223
	Batting	1	.99%	0	.00%	1	.99%			
	Fielding	0	.00%	1	.99%	1	.99%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	98	97.03%	98	97.03%			
	T20	1	.99%	0	.00%	1	.99%	3.000	2	.223
	45	0	.00%	1	.99%	1	.99%			
	60	0	.00%	1	.99%	1	.99%			
Severity?	N/A	0	.00%	98	97.03%	98	97.03%			
	Mild	1	.99%	2	1.98%	3	2.97%			
	Moderate	0	.00%	0	.00%	0	.00%			
	Severe	0	.00%	0	.00%	0	.00%			
Effect on cricket?	N/A	0	.00%	98	97.03%	98	97.03%			
	Prevented	0	.00%	0	.00%	0	.00%			
	Limited	1	.99%	2	1.98%	3	2.97%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	98	97.03%	98	97.03%			
	< 3 weeks-acute	1	.99%	2	1.98%	3	2.97%			
	3-6 weeks - sub-acute	0	.00%	0	.00%	0	.00%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

Table L8: Association between previous injury descriptors and Hip / Groin injury										
		h. Hip / Groin						Chi square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	96	95.05%	96	95.05%	1.875	1	.171
	Yes	1	.99%	3	2.97%	4	3.96%			
	No	1	.99%	0	.00%	1	.99%			
Activity of cricket?	N/A	0	.00%	96	95.05%	96	95.05%			
	Bowling	0	.00%	2	1.98%	2	1.98%			
	Batting	1	.99%	0	.00%	1	.99%			
	Fielding	1	.99%	0	.00%	1	.99%	5.000	3	.172
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	1	.99%	1	.99%			
Form of cricket?	N/A	0	.00%	96	95.05%	96	95.05%			
	0	0	.00%	1	.99%	1	.99%			
	T20	0	.00%	0	.00%	0	.00%	2.222	2	.329
	45	1	.99%	0	.00%	1	.99%			
	60	1	.99%	2	1.98%	3	2.97%			
Severity?	N/A	0	.00%	96	95.05%	96	95.05%			
	Mild	1	.99%	1	.99%	2	1.98%	.833	2	.659
	Moderate	1	.99%	1	.99%	2	1.98%			
	Severe	0	.00%	1	.99%	1	.99%			
Effect on cricket?	N/A	0	.00%	96	95.05%	96	95.05%			
	Prevented	1	.99%	0	.00%	1	.99%	1.875	1	.171
	Limited	1	.99%	3	2.97%	4	3.96%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	96	95.05%	96	95.05%			
	< 3 weeks-acute	1	.99%	2	1.98%	3	2.97%	2.222	2	.329
	3-6 weeks - sub-acute	1	.99%	0	.00%	1	.99%			
	> 6 weeks-chronic	0	.00%	1	.99%	1	.99%			

Table L9: Association between previous injury descriptors and Lower Back injury										
		i. Lower back						Chi square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	80	79.21%	80	79.21%			
	Yes	6	5.94%	8	7.92%	14	13.86%	1.909	2	.385
	No	4	3.96%	2	1.98%	6	5.94%			
		0	.00%	1	.99%	1	.99%			
Activity of cricket?	N/A	0	.00%	80	79.21%	80	79.21%			
	Bowling	8	7.92%	8	7.92%	16	15.84%	.955	2	.620
	Batting	2	1.98%	2	1.98%	4	3.96%			
	Fielding	0	.00%	1	.99%	1	.99%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Effect on cricket?	N/A	0	.00%	80	79.21%	80	79.21%	.286	2	.867
	Prevented	2	1.98%	2	1.98%	4	3.96%			
	Limited	7	6.93%	7	6.93%	14	13.86%			
	No effect	1	.99%	2	1.98%	3	2.97%			
Time out of cricket?	N/A	0	.00%	80	79.21%	80	79.21%			
	< 3 weeks-acute	6	5.94%	6	5.94%	12	11.88%	.095	2	.953
	3-6 weeks - sub-acute	3	2.97%	4	3.96%	7	6.93%			
	> 6 weeks-chronic	1	.99%	1	.99%	2	1.98%			

Table L10: Association between Previous Injury descriptors and Upper Back injury										
		j. Upper back						Chi square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	101	100.00%	101	100.00%			
	Yes	0	.00%	0	.00%	0	.00%			
	No	0	.00%	0	.00%	0	.00%			
Activity of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Bowling	0	.00%	0	.00%	0	.00%			
	Batting	0	.00%	0	.00%	0	.00%			
	Fielding	0	.00%	0	.00%	0	.00%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	T20	0	.00%	0	.00%	0	.00%			
	45	0	.00%	0	.00%	0	.00%			
	60	0	.00%	0	.00%	0	.00%			
Severity?	N/A	0	.00%	101	100.00%	101	100.00%			
	Mild	0	.00%	0	.00%	0	.00%			
	Moderate	0	.00%	0	.00%	0	.00%			
	Severe	0	.00%	0	.00%	0	.00%			
Effect on playing cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Prevented	0	.00%	0	.00%	0	.00%			
	Limited	0	.00%	0	.00%	0	.00%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	< 3 weeks-acute	0	.00%	0	.00%	0	.00%			
	3-6 weeks-subacute	0	.00%	0	.00%	0	.00%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

No previous injuries were reported for the upper back.

Table L11: Association between Previous Injury descriptors and Neck injury										
		k. Neck						Chi Square	df	p
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	101	100.00%	101	100.00%			
	Yes	0	.00%	0	.00%	0	.00%			
	No	0	.00%	0	.00%	0	.00%			
Activity of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Bowling	0	.00%	0	.00%	0	.00%			
	Batting	0	.00%	0	.00%	0	.00%			
	Fielding	0	.00%	0	.00%	0	.00%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	T20	0	.00%	0	.00%	0	.00%			
	45	0	.00%	0	.00%	0	.00%			
	60	0	.00%	0	.00%	0	.00%			
Severity?	N/A	0	.00%	101	100.00%	101	100.00%			
	Mild	0	.00%	0	.00%	0	.00%			
	Moderate	0	.00%	0	.00%	0	.00%			
	Severe	0	.00%	0	.00%	0	.00%			
Effect on playing cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Prevented	0	.00%	0	.00%	0	.00%			
	Limited	0	.00%	0	.00%	0	.00%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	< 3 weeks-acute	0	.00%	0	.00%	0	.00%			
	3-6 weeks-subacute	0	.00%	0	.00%	0	.00%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

No previous neck injuries were reported.

Table L12: Association between Previous Injury descriptors and Head injury										
		I. Head						Chi Square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	101	100.00%	101	100.00%			
	Yes	0	.00%	0	.00%	0	.00%			
	No	0	.00%	0	.00%	0	.00%			
Activity of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Bowling	0	.00%	0	.00%	0	.00%			
	Batting	0	.00%	0	.00%	0	.00%			
	Fielding	0	.00%	0	.00%	0	.00%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	T20	0	.00%	0	.00%	0	.00%			
	45	0	.00%	0	.00%	0	.00%			
	60	0	.00%	0	.00%	0	.00%			
Severity?	N/A	0	.00%	101	100.00%	101	100.00%			
	Mild	0	.00%	0	.00%	0	.00%			
	Moderate	0	.00%	0	.00%	0	.00%			
	Severe	0	.00%	0	.00%	0	.00%			
Effect on playing cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Prevented	0	.00%	0	.00%	0	.00%			
	Limited	0	.00%	0	.00%	0	.00%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	< 3 weeks-acute	0	.00%	0	.00%	0	.00%			
	3-6 weeks-subacute	0	.00%	0	.00%	0	.00%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

No previous head injuries were reported.

Table L13: Association between previous injury descriptors and Shoulder injury										
		m. Shoulder						Chi square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	94	93.07%	94	93.07%			
	Yes	0	.00%	1	.99%	1	.99%	1.556	1	.212
	No	4	3.96%	2	1.98%	6	5.94%			
Activity of cricket?	N/A	0	.00%	94	93.07%	94	93.07%			
	Bowling	2	1.98%	2	1.98%	4	3.96%	.194	1	.659
	Batting	0	.00%	0	.00%	0	.00%			
	Fielding	2	1.98%	1	.99%	3	2.97%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	94	93.07%	94	93.07%			
	T20	0	.00%	0	.00%	0	.00%	.000	1	1.000
	45	1	.99%	1	.99%	2	1.98%			
	60	3	2.97%	2	1.98%	5	4.95%			
Effect on cricket?	N/A	0	.00%	94	93.07%	94	93.07%			
	Prevented	0	.00%	1	.99%	1	.99%	2.100	2	.350
	Limited	3	2.97%	2	1.98%	5	4.95%			
	No effect	1	.99%	0	.00%	1	.99%			
Time out of cricket?	N/A	0	.00%	94	93.07%	94	93.07%			
	< 3 weeks-acute	4	3.96%	2	1.98%	6	5.94%	1.556	1	.212
	3-6 weeks - sub-acute	0	.00%	1	.99%	1	.99%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

Table L14: Association between Previous Injury descriptors and Biceps injury										
		n. Biceps (front of upper arm)						Chi Square	df	*p*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	101	100.00%	101	100.00%			
	Yes	0	.00%	0	.00%	0	.00%			
	No	0	.00%	0	.00%	0	.00%			
Activity of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Bowling	0	.00%	0	.00%	0	.00%			
	Batting	0	.00%	0	.00%	0	.00%			
	Fielding	0	.00%	0	.00%	0	.00%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	T20	0	.00%	0	.00%	0	.00%			
	45	0	.00%	0	.00%	0	.00%			
	60	0	.00%	0	.00%	0	.00%			
Severity?	N/A	0	.00%	101	100.00%	101	100.00%			
	Mild	0	.00%	0	.00%	0	.00%			
	Moderate	0	.00%	0	.00%	0	.00%			
	Severe	0	.00%	0	.00%	0	.00%			
Effect on playing cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Prevented	0	.00%	0	.00%	0	.00%			
	Limited	0	.00%	0	.00%	0	.00%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	< 3 weeks-acute	0	.00%	0	.00%	0	.00%			
	3-6 weeks-subacute	0	.00%	0	.00%	0	.00%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

There were no previous biceps injuries reported.

Table L15: Association between Previous Injury descriptors and Triceps injury										
		o. Triceps (back of upper arm)						Chi Square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	101	100.00%	101	100.00%			
	Yes	0	.00%	0	.00%	0	.00%			
	No	0	.00%	0	.00%	0	.00%			
Activity of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Bowling	0	.00%	0	.00%	0	.00%			
	Batting	0	.00%	0	.00%	0	.00%			
	Fielding	0	.00%	0	.00%	0	.00%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	T20	0	.00%	0	.00%	0	.00%			
	45	0	.00%	0	.00%	0	.00%			
	60	0	.00%	0	.00%	0	.00%			
Severity?	N/A	0	.00%	101	100.00%	101	100.00%			
	Mild	0	.00%	0	.00%	0	.00%			
	Moderate	0	.00%	0	.00%	0	.00%			
	Severe	0	.00%	0	.00%	0	.00%			
Effect on playing cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Prevented	0	.00%	0	.00%	0	.00%			
	Limited	0	.00%	0	.00%	0	.00%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	< 3 weeks-acute	0	.00%	0	.00%	0	.00%			
	3-6 weeks-subacute	0	.00%	0	.00%	0	.00%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

There were no previous triceps injuries.

Table L16: Association between previous injury descriptors and Elbow injury										
		p. Elbow						Chi square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	99	98.02%	99	98.02%			
	Yes	1	.99%	0	.00%	1	.99%	2.000	1	.157
	No	0	.00%	1	.99%	1	.99%			
Activity of cricket?	N/A	0	.00%	99	98.02%	99	98.02%			
	Bowling	0	.00%	0	.00%	0	.00%	2.000	1	.157
	Batting	1	.99%	0	.00%	1	.99%			
	Fielding	0	.00%	1	.99%	1	.99%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	99	98.02%	99	98.02%			
	T20	0	.00%	0	.00%	0	.00%	2.000	1	.157
	45	1	.99%	0	.00%	1	.99%			
	60	0	.00%	1	.99%	1	.99%			
Severity?	N/A	0	.00%	99	98.02%	99	98.02%			
	Mild	0	.00%	0	.00%	0	.00%	2.000	1	.157
	Moderate	1	.99%	0	.00%	1	.99%			
	Severe	0	.00%	1	.99%	1	.99%			
Effect on cricket?	N/A	0	.00%	99	98.02%	99	98.02%			
	Prevented	0	.00%	1	.99%	1	.99%	2.000	1	.157
	Limited	1	.99%	0	.00%	1	.99%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	99	98.02%	99	98.02%			
	< 3 weeks-acute	0	.00%	1	.99%	1	.99%	2.000	1	.157
	3-6 weeks - sub-acute	1	.99%	0	.00%	1	.99%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

Table L17: Association between Previous Injury descriptors and Forearm										
		q. Forearm						Chi Square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	101	100.00%	101	100.00%			
	Yes	0	.00%	0	.00%	0	.00%			
	No	0	.00%	0	.00%	0	.00%			
Activity of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Bowling	0	.00%	0	.00%	0	.00%			
	Batting	0	.00%	0	.00%	0	.00%			
	Fielding	0	.00%	0	.00%	0	.00%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	T20	0	.00%	0	.00%	0	.00%			
	45	0	.00%	0	.00%	0	.00%			
	60	0	.00%	0	.00%	0	.00%			
Severity?	N/A	0	.00%	101	100.00%	101	100.00%			
	Mild	0	.00%	0	.00%	0	.00%			
	Moderate	0	.00%	0	.00%	0	.00%			
	Severe	0	.00%	0	.00%	0	.00%			
Effect on playing cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Prevented	0	.00%	0	.00%	0	.00%			
	Limited	0	.00%	0	.00%	0	.00%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	< 3 weeks-acute	0	.00%	0	.00%	0	.00%			
	3-6 weeks-subacute	0	.00%	0	.00%	0	.00%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

There were no previous forearm injuries reported.

Table L18: Association between Previous Injury descriptors and Wrist injury										
		r. Wrist						Chi Square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	101	100.00%	101	100.00%			
	Yes	0	.00%	0	.00%	0	.00%			
	No	0	.00%	0	.00%	0	.00%			
Activity of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Bowling	0	.00%	0	.00%	0	.00%			
	Batting	0	.00%	0	.00%	0	.00%			
	Fielding	0	.00%	0	.00%	0	.00%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	T20	0	.00%	0	.00%	0	.00%			
	45	0	.00%	0	.00%	0	.00%			
	60	0	.00%	0	.00%	0	.00%			
Severity?	N/A	0	.00%	101	100.00%	101	100.00%			
	Mild	0	.00%	0	.00%	0	.00%			
	Moderate	0	.00%	0	.00%	0	.00%			
	Severe	0	.00%	0	.00%	0	.00%			
Effect on playing cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	Prevented	0	.00%	0	.00%	0	.00%			
	Limited	0	.00%	0	.00%	0	.00%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	< 3 weeks-acute	0	.00%	0	.00%	0	.00%			
	3-6 weeks-subacute	0	.00%	0	.00%	0	.00%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

There are no previous wrist injuries reported.

Table L19: Association between previous injury descriptors and Hand / Finger injury										
		s. Hand / Finger						Chi square	df	*P*
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	92	91.09%	92	91.09%			
	Yes	2	1.98%	0	.00%	2	1.98%	1.286	1	.257
	No	4	3.96%	3	2.97%	7	6.93%			
Activity of cricket?	N/A	0	.00%	92	91.09%	92	91.09%			
	Bowling	1	.99%	0	.00%	1	.99%	3.000	3	.392
	Batting	2	1.98%	0	.00%	2	1.98%			
	Fielding	1	.99%	2	1.98%	3	2.97%			
	Wicket keeping	2	1.98%	1	.99%	3	2.97%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	92	91.09%	92	91.09%			
	T20	1	.99%	0	.00%	1	.99%	.600	2	.741
	45	2	1.98%	1	.99%	3	2.97%			
	60	3	2.97%	2	1.98%	5	4.95%			
Severity?	N/A	0	.00%	92	91.09%	92	91.09%			
	Mild	0	.00%	1	.99%	1	.99%	2.400	2	.301
	Moderate	4	3.96%	1	.99%	5	4.95%			
	Severe	2	1.98%	1	.99%	3	2.97%			
Effect on cricket?	N/A	0	.00%	92	91.09%	92	91.09%			
	Prevented	2	1.98%	0	.00%	2	1.98%	1.500	2	.472
	Limited	2	1.98%	1	.99%	3	2.97%			
	No effect	2	1.98%	2	1.98%	4	3.96%			
Time out of cricket?	N/A	0	.00%	92	91.09%	92	91.09%			
	< 3 weeks-acute	4	3.96%	3	2.97%	7	6.93%	1.286	1	.257
	3-6 weeks - sub-acute	2	1.98%	0	.00%	2	1.98%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

Table L20: Association between Previous Injury descriptors and 'Other' injury										
		t. Other						**Chi Square**	**df**	***P***
		Yes		No		Total				
		Count	%	Count	%	Count	%			
Worst injury?	N/A	0	.00%	100	99.01%	100	99.01%			
	Yes	0	.00%	0	.00%	0	.00%			
	No	0	.00%	1	.99%	1	.99%			
Activity of cricket?	N/A	0	.00%	100	99.01%	100	99.01%			
	Bowling	0	.00%	1	.99%	1	.99%			
	Batting	0	.00%	0	.00%	0	.00%			
	Fielding	0	.00%	0	.00%	0	.00%			
	Wicket keeping	0	.00%	0	.00%	0	.00%			
	Other	0	.00%	0	.00%	0	.00%			
Form of cricket?	N/A	0	.00%	100	99.01%	100	99.01%			
	T20	0	.00%	1	.99%	1	.99%			
	45	0	.00%	0	.00%	0	.00%			
	60	0	.00%	0	.00%	0	.00%			
Severity?	N/A	0	.00%	100	99.01%	100	99.01%			
	Mild	0	.00%	0	.00%	0	.00%			
	Moderate	0	.00%	0	.00%	0	.00%			
	Severe	0	.00%	1	.99%	1	.99%			
Effect on playing cricket?	N/A	0	.00%	100	99.01%	100	99.01%			
	Prevented	0	.00%	1	.99%	1	.99%			
	Limited	0	.00%	0	.00%	0	.00%			
	No effect	0	.00%	0	.00%	0	.00%			
Time out of cricket?	N/A	0	.00%	101	100.00%	101	100.00%			
	< 3 weeks-acute	0	.00%	0	.00%	0	.00%			
	3-6 weeks-subacute	0	.00%	0	.00%	0	.00%			
	> 6 weeks-chronic	0	.00%	0	.00%	0	.00%			

No previous injuries classified as 'other' were reported.

APENDIX L – Ethics Clearance certificate

ETHICS CLEARANCE CERTIFICATE

Student Name	Rory Thiessen	Student No	20300565
Ethics Reference Number	FHSEC 006/09	Date of FRC Approval	09 MARCH 2009
Research Title:	A Profile of Injuries and Contributing Factors in Premier League Cricket Players in the Greater Durban Area		

In terms of the ethical considerations for the conduct of research in the Faculty of Health Sciences, Durban University of Technology, this proposal meets with Institutional requirements and confirms the following ethical obligations:

1. The researcher has read and understood the research ethics policy and procedures as endorsed by the Durban University of Technology, has sufficiently answered all questions pertaining to ethics in the DUT 186 and agrees to comply with them.
2. The researcher will report any serious adverse events pertaining to the research to the Faculty of Health Sciences Research Ethics Committee.
3. The researcher will submit any major additions or changes to the research proposal after approval has been granted to the Faculty of Health Sciences Research Committee for consideration.
4. The researcher, with the supervisor and co-researchers will take full responsibility in ensuring that the protocol is adhered to.
5. ***The following section must be completed if the research involves human participants:***

	YES	NO	N/A
❖ Provision has been made to obtain informed consent of the participants	✓		
❖ Potential psychological and physical risks have been considered and minimised			✓
❖ Provision has been made to avoid undue intrusion with regard to participants and community	✓		
❖ Rights of participants will be safe-guarded in relation to: - Measures for the protection of anonymity and the maintenance of Confidentiality.	✓		
- Access to research information and findings.	✓		
- Termination of involvement without compromise	✓		
- Misleading promises regarding benefits of the research	✓		

SIGNATURE OF STUDENT/RESEARCHER — DATE 11/03/09

SIGNATURE OF SUPERVISOR/S — DATE 11/03/09

SIGNATURE OF HEAD OF DEPARTMENT — DATE 11 MARCH 2009

pp

SIGNATURE: CHAIRPERSON OF RESEARCH ETHICS COMMITTEE — DATE 12/03/09

APPENDIX N – CD of the Focus Group Proceedings