

A PROFILE OF SOCCER INJURIES IN SELECTED LEAGUE AMATEUR INDOOR AND OUTDOOR SOCCER PLAYERS IN THE GREATER DURBAN AREA

By

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A dissertation submitted to the faculty of health in partial compliance with the requirements for the Masters Degree in Technology : Chiropractic, at the Durban University Of Technology.

I, Nigel Wayne Archary, do declare that this dissertation represents my own work in both conception and execution.

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Dedication

To my Lord and saviour Jesus Christ for giving me the strength to accomplish
what I have done.

Acknowledgments

To my parents, sister, family and friends, thank you for all your love and support.

Dr Charmaine Korporaal. Mentor, friend and true inspiration.

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Abstract

Objectives: To determine a profile of soccer injuries prevalent in amateur Indoor and Outdoor soccer players in the greater Durban areas.

Methods: This study used the Outdoor Supersport corporate league and the Kwa-Zulu Natal (KZN) Indoor soccer league. A total of 103 out of a possible 147 players participated in the study which included 41 Outdoor and 62 Indoor players. The Indoor soccer players were contacted to complete the questionnaire at their match days at the Gale street Indoor soccer arena and the Outdoor players were contacted during their training sessions and/or match days. The researcher was present to answer any questions posed by the participants. In the case of participants having difficulty in understanding English, a bilingual Zulu translator accompanied the researcher in every interaction with the participants.

Results: Out of a total of 103 participants, the foot/ankle (62.1%) was the most frequently injured site. This was followed closely by the knee (55.3%). The rest of the sites in descending order were wrist, back, head, elbow, shoulder, chest, genital and abdomen. All participants reported a first injury, 69 participants reported a second injury and 27 participants reported a third injury. Outdoor soccer players reported the knee as being the most affected area, while Indoor soccer players injured the foot/ankle frequently. Furthermore, age was stated as a significant positive correlation when compared with number of sessions missed, meaning the older the participants, the more sessions they missed. The findings suggest that the use of protective equipment can decrease injury rates due to the use of ankle guards decreasing missed sessions.

Conclusion: The profile of soccer injuries in selected amateur league Indoor and Outdoor soccer players in the greater Durban area has been described in this study. In terms of number of injuries, there seems to be no significant differences

between Indoor and Outdoor soccer players. With regard to site of injuries, the lower limb was affected more than any other body part. The Outdoor players showed more knee injuries than the Indoor players who showed higher incidences of foot/ankle injuries.

Key Terms: soccer, soccer injuries, injury profile

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Definition of Terms:

Overuse injury: Any tendon or muscle injury caused by any combination of repetitive prolonged movements, forcefulness, or an awkward position.

Sprain: A sprain is a stretched or torn ligament. Ligaments are tissues that connect bones at a joint. Falling, twisting, or getting hit can all cause a sprain.

Strain: A strain is when a muscle becomes overstretched and tears. This painful injury, also called a "pulled muscle," can be caused by trauma, improper use of a muscle, or overuse of a muscle.

Spearman's Correlation: Spearman's coefficient (r_s) is used when the data appears to correlate, but not in a linear fashion. If the variables vary "monotonically" i.e. as one variable increases the other variable increases or as one variable increases the other variable decreases consistently, then the

Spearman's coefficient may be used. Spearman's correlation coefficient equation is as follows (Campbell and Machin, 1999; Hinton, 2001):

$$r_s = 1 - \left[\frac{6 \sum D^2}{N^3 - N} \right]$$

Chapter One

INTRODUCTION

1.1 Introduction

Soccer, also known as football, is the most popular team sport in the world with an estimated 40 million amateur participants (Bir et al., 2001). With this participation, the frequency of football injuries is estimated to be approximately 10 to 35 per 1000 playing hours (Dvorak et al., 2000). In congruence with this, soccer is also responsible for about 50-60% of all sports-related injuries in Europe (Arnason et al., 1996), which negatively impacts on a person's lifestyle.

Considering the number of active soccer players worldwide and the high injury rate, the socioeconomic and financial consequences of injury are of such a proportion that a prevention program to reduce the incidence of injuries is urgently required (Dvorak et al., 2000). FIFA estimates that the average worldwide medical cost of a soccer injury is USD 150, leading to an estimated annual cost of USD 30 billion (Dvorak et al., 2000). So, injury prevention should be the main focus of health care professionals.

The outdoor soccer league in this study is the Supersport corporate league with each team having 10 players with a maximum of 7 players participating on the field of play. This league is played on natural turf outdoors. In contrast, the indoor soccer league is the Kwa-Zulu Natal (KZN) indoor league with each team having 7 players with a maximum of 5 players participation in the field of play. This league is played on artificial turf indoors.

A study by Junge et al., 2002 showed the reduction of the incidence of soccer injuries by preventative interventions. These can however only be done once the background and associated risk factors of soccer injuries are fully

understood. By understanding the mechanisms of injury and the most common affected areas of injury, this will lead to appropriate treatment and preventative strategies. This will also result in more effective treatment protocols among healthcare professionals and therefore increased recovery rate of the patient. This is important because the patient will be able to return to a normal lifestyle as soon as possible.

1.2 Aim of the study

The aim of this study was to determine a profile of soccer injuries prevalent in amateur indoor and outdoor soccer players in the greater Durban area.

1.2.1 The first objective

Was to establish a demographic profile of amateur soccer players in the greater Durban area.

1.2.1.1 Null hypothesis one:

The demographic profile of amateur soccer players in the greater Durban area is not similar to international literature profiling soccer players.

1.2.2 The second objective

Was to establish a representative profile of soccer related injuries that players sustain over the previous season.

1.2.2.1 Null hypothesis two:

The injury profile of amateur indoor and outdoor soccer players in the greater Durban area are not congruent with the literature with respect to site, number and mechanism of injury.

1.2.3 The third objective

Was to establish the difference and severity of injuries sustained by indoor and outdoor soccer players.

1.2.3.1 Null hypothesis three:

Indoor and outdoor soccer players do not show the same site and severity of injuries.

1.2.4 The fourth objective

Was to determine the relationship and/or association with the demographic profile and severity and number of injuries of the amateur indoor and outdoor soccer players.

1.2.4.1 Null hypothesis four:

The relationship between demographic profile and the severity of injuries of indoor and outdoor soccer players shows no correlation.

1.2.5 The fifth objective

Was to assess the association between number and severity of injuries and protective equipment used by outdoor and indoor soccer players.

1.2.5.1 Null hypothesis five:

Protective equipment does not play a role in decreasing the number and severity of injuries in indoor and outdoor soccer players.

1.4 Rationale for the Study and Research Questions

The rationale for this study was to profile soccer injuries to educate healthcare providers so that injury prevention and prevention methods can be improved.

Due to the 2010 Soccer World Cup being held in South Africa, the benefits of this research may assist healthcare providers e.g. Chiropractors involvement in treatment protocol development. Protocol development may be done due to the increased knowledge of soccer injury profiles, rates, incidence and preventative measures.

1.5 Assumptions/ Limitations

It was assumed that all respondents were able to understand and respond in English.

All soccer players were required to report honestly and openly their reality of their situation.

1.6 Conclusion

The aim of this study was to determine a profile of soccer injuries prevalent in amateur indoor and outdoor soccer players in the greater Durban and surrounding areas.

Chapter Two consists of a brief review of literature, followed by the research methodology (Chapter Three), and lastly the results, interpretation and conclusion thereof in Chapters Four, Five and Six respectively.

Chapter Two

REVIEW OF RELATED LITERATURE

2.1 Introduction and overview of the chapter

Soccer, also known as football, is the most popular game in the world (Bir et al., 2001). It is played predominantly with the feet, but players may use any part of their body except their hands and arms to propel the ball e.g. heading the ball. The exceptions to this are the goalkeepers, who are the only players allowed to handle the ball in the field of play. The aim of soccer is to propel the ball into the opposition goalposts (Bir et al., 2001). Ekblom (1986) describes soccer as being a high intensity sport, characterised by short, quick, non-continuous movements such as sprinting, stopping and changes in direction. Based on the popularity of soccer and the participation in the sport, soccer is seen as being responsible for about 50-60% of all sport related injuries in Europe (Arnason et al., 1996).

The following chapter aims to review the literature regarding various soccer injuries. These studies are discussed under the following headings and with respect to outdoor and indoor soccer players: the mechanism of injury; the nature of injuries, injury profile by player position, age and skill differences, effect of footwear and playing surface, preventative equipment, preventative measures, financial implications, and finally the profile and incidence of indoor and outdoor soccer injuries.

2.2 The mechanism of injury

According to Agel et al., (2007), there are 3 primary injury mechanisms—player contact, other contact (eg, balls, goals, ground), and no contact.

A study by Chomiak et al., (2000) on injuries in football players and influencing risk factors reported that 46% of injuries were caused by contact and 54% involved no body contact. This was similar to Hawkins et al., (2001) who stated that 58% of injury mechanisms were classified as being non-contact.

In contrast to this, Rahnema et al., (2002) suggested that some playing actions were associated with higher injury risk than others. In particular, receiving a tackle, making a tackle, and receiving a charge were actions with a substantial risk of injury.

In contrast to Chomiak et al., (2000) who found 46% of injuries were caused by contact, Agel et al., (2007) showed that most game injuries (61%) resulted from contact with another player. Most other contact injuries (17.9%) occurred through contact with the surface, while 19.9% of injuries occurred with no contact. Less than 1% of reported injuries over the 15-year period were associated with contact with the goal. Approximately 16% of all game injuries were associated with either attempting or receiving a slide tackle.

2.3 The nature of injuries

Arnason et al., (1996), who in a non-hospital based study in elite soccer players in Iceland, showed that the majority of injuries found were muscle, ligament strains and contusions. Strains occurred mainly during sprinting, sprains by tackling, and contusion during other contact. Similarly, in the study conducted by Frantz et al., (1999), bruises (contusions) and joint swelling or inflammation were recorded among the commonest types of soccer injuries.

Hawkins et al., (2001) reported that sprains (37%) and strains (19%) were the main injury types with the majority occurring in the lower limb. The study showed that the majority of thigh injuries were muscular strains (81%), the majority of knee injuries and ankle injuries were ligament sprains with 39% and 67% respectively. This was similar to Price et al., (2004), which showed that strains (31%) and sprains (20%) were the main injury types, predominantly affecting the lower limb. Both these studies required medical personnel to report injuries from players.

Onywera (2004) shows similar results with Frantz et al., (1999) where it was established that soft tissue injuries accounted for the highest percentage (77.45%).

2.4 Injury profile by player position

With respect to player position; McMaster and Walter (1978) did a study of a professional soccer team from 1976 to 1977, resulting in the finding that midfield (construction zone) players and forward (offensive zone) players were injured the most. More injuries occurred in competition than practice.

A study conducted by Onywera (2004) in the 2001 Moi Golden Cup tournament in Kenya showed that in terms of player position, the offensive zone (36.3%) accounted for the most injuries as compared to the defensive (34.3%) and construction zones (29.4%). This shows congruency with McMaster and Walter's (1978) study and there has been little change over time even though technologies and treatment methods have improved. This could possibly be due to injury profiles being mainly hospital/clinic based and therefore the causes are not addressed at their infancy.

2.5 Age and skill differences

In terms of age differences and skill levels, Lindenfeld et al., (1994), did a study on indoor soccer players which showed higher injury rates in older age groups (>25) as compared to younger age groups.

This was supported by Chomiak et al., (2000), who did a study on outdoor soccer injuries in the Czech Republic. The ages of the players ranged from 14 to 42 years and teams were amateur teams up to first league (professional). The number of severe injuries equalled 16.5% of the total number of soccer injuries with trauma (actual event) being the main cause (81.5%) as opposed to overuse injury (18.5%). Injuries to the knee were most prevalent (29%), followed by injuries to the ankle (19%) and spine (9%). Personal factors such as age of player in addition to poor physical condition and poor football skills increased the risk of injury at any age (Chomiak et al., 2000).

2.6 The effect of footwear and playing surface

A study by Powell (1987) found that playing on artificial turf increased the incidence of knee, ankle and foot injuries compared with natural grass.

A year later, this study was contradicted by Nigg and Segesser (1988), who showed that severe injuries seem to occur as frequently on natural grass as on artificial turf. They speculated that the shoe-surface combination that determines the frictional forces is connected with the injury frequency, (i.e. the higher the frictional resistance such as grass, the higher the injury frequency). Surfaces with low frictional resistance are assumed to cause fewer injuries than surfaces with high frictional resistance, therefore, the frictional property of a surface is one of the main factors to be considered when studying the aetiology of acute and/or chronic pain and injury in sports.

The following year Ekstrand and Nigg (1989), who showed that shoe surface tension played a role in higher traumatic injury rates. Research in American football players who have worn shoes with higher friction properties, such as spikes or cleats, showed increased injuries. Ekstrand and Nigg (1989) also concluded that differences between artificial turf and natural grass account for the varying rates of injury between indoor and outdoor soccer players because artificial turf produced more abrasion injuries while natural grass produced more higher traumatic injury rates.

Powell and Schootman (1992) showed a significant higher injury rate per team game for anterior cruciate ligament injuries on artificial surfaces versus natural grass. Likewise Inklaar (1994) who reported that the stiffness of a surface affects impact forces and can result in overload to tissues such as bone, cartilage, muscle, tendon and ligament. More injuries may be increased on artificial turf than on any other surface because of its stiffness.

This was similar to Lees and Nolan (1998) who stated that artificial surfaces result in injury profiles different from those on natural turf pitches. There is a tendency for fewer serious (traumatic) injuries, but more minor (abrasion) injuries, on artificial turf than on natural pitches which is similar to Murphy et al., (2003), who reported that friction is necessary for rapid starting, stopping, cutting and pivoting needed for sports such as soccer; however increased functional force may contribute to the increased incidence of injury among athletes who play on artificial surfaces.

2.7 Preventative equipment

Research has shown that preventative equipment (i.e. ankle guards, shin guards) has shown to reduce injury rates. Tropp et al., (1985) suggested in their study that the use of rigid ankle orthosis could reduce the rate of recurrent sprains. This

view was supported by Handoll et al., (2000) who showed the beneficial effect of ankle supports in the form of semi-rigid orthosis or air-cast braces prevent ankle sprains during soccer.

Bir et al., (2001) concluded that shin guards were found to be effective in lowering the amount of impact force transferred to the shin. The results of this study indicate that the use of shin guards will reduce the force of impact to the tibia and thus reduce the risk of injury.

This view was different from Cattermole et al., (1996) who suggested 84% of lower leg fractures occurred while shin guards were worn. This concurred with research done by Boden et al., (1999), who investigated thirty-one fractures of the tibia and fibula found that 87% of the players wore shin guards at the time of injury. Boden et al., (1999) also showed that even though shin guards prolonged the contact time with the tibia therefore decreasing the magnitude of impact, this was only effective up to a certain critical force. Once this critical force is exceeded, shin guards were not helpful.

Another study by Agel et al., (2007), reported that with the mandatory wearing of shin guards there was no significant or recognizable reduction in the ankle and lower leg injury rate.

2.8 Preventative measures

McMaster and Walter (1978) made the recommendation that physicians become familiar with the most common injuries in order to give appropriate care and injury prevention programs, thus prevention of injuries should be the focus in dealing with sportsmen and sportswomen.

Arnason et al., (1996) showed that the rate of re-injury was very high with strains (44%) and sprains (58%) being the most commonly re-injury type. Also, teams who had the longest pre-season preparation period obtained significantly fewer injuries during the season. This highlights the need for sufficient preparation and effective preventative and measures.

The rate of re-injury was congruent with results from Hawkins et al., (2001), a prospective epidemiological study of the injuries sustained in English professional football over two seasons. The study showed re-injuries accounted for 7% of all injuries with 66% of those being either a strain or a sprain. The severity of re-injuries was greater than the initial injury. The authors concluded that football players are exposed to a high risk of injury and recommended a need to investigate ways of reducing this risk. Other areas that they recommended included the current training programs implemented by clubs during different stages of the season, factors contributing to the pattern of injuries during matches and the rehabilitation procedures employed by clubs.

Another study by Caraffa et al., (1996) on anterior cruciate ligament (ACL) injuries reported that proprioceptive (balance board) training could reduce the number of ACL injuries in soccer. This study divided two groups of 300 players from 40 amateur teams in Italy. A control group trained as normal while the other group were instructed to train with a balance board for 20 minutes a day with phases of increasing difficulty in a 30 day pre-season program. The findings showed a reduction of ACL injuries in the balance board group as compared to the control group.

Dvorak et al., (2000), who suggested that a multifaceted prevention approach could reduce soccer injury rates, but one specific intervention cannot be singled out. Just as a culmination of factors may predispose a soccer player to injury, it is reasonable to suggest that a culmination of other preventive measures will

continue to have a positive effect on the overall injury rate in male soccer players (Dvorak et al., 2000).

This point is enforced by the research done by Junge et al., (2002) where there was a reduction of the incidence of soccer injuries by preventative interventions. However, in order to achieve this, the identification of injuries and their risk factors is required in order to develop risk controls within the context of sports injury prevention. The occurrence of injuries in sports and the negligence of injured players are key factors in the early exit of talented players from competitive sport in developing countries. The injury rate in soccer is high and effective injury prevention methods are essential (Arnason et al., 2005).

2.9 Financial Implications

A study by Maehlum and Daljord (1984) reported on the economic impact of soccer players missing work due to injury. They reported that football injuries required 1 966 consultations and necessitated that 349 patients had to stay away from work for a total of 6 137 days.

This study was supported by Dvorak et al., (2000) on football injuries and the physical symptoms, concluded that the average cost for medical treatment per football injury is estimated to be \$150 (U.S. dollars). Considering the number of active football players worldwide, the socioeconomic and financial consequences of injury are of such a proportion that a prevention program to reduce the incidence of injuries is urgently required.

2.10 The incidence of indoor soccer injuries as compared to outdoor soccer

A study by Hoff and Martin (1986) that showed the incidence of injuries among youth soccer players participating in indoor soccer was 4.5 times that of outdoor soccer. Medical assistance was required for 6.5% of injuries among outdoor players compared to 24.3% among indoor players. This study was supported by Lindenfeld et al., (1994), in a prospective study of children and adults during an indoor soccer season in which these players encountered injuries 6.1 times as frequent as outdoor soccer players.

Lindenfeld et al., (1994) reported that the differences in the above studies were possibly as a result of data collection methods. Hoff and Martin (1986) relied on questionnaires sent to coaches and parents of the participants who may have not had the appropriate medical training. This could be a reason for both minor and major injuries being missed. Lindenfeld et al., (1994) relied on a representative assigned to each game that actively sought injured athletes and assisted them in completing the questionnaire but acknowledged that it seemed likely that minor injuries could have been missed because some of these players refused to co-operate with the researcher after the game.

A decade after Hoff and Martin (1986) study, Castle et al., (1996) at The Lake Placid Dawn to Dark Soccer tournament reported the incidence of indoor soccer injuries as 10.8 per 100 player hours. The reasons postulated for the high injury rate is that this tournament occurred over 3 days, and thus had a high volume of intense games. Also, a higher injury rate was said to coincide with an increase in the presumed fatigue level of the participants as the tournament progressed.

Factors proposed by Castle et al., (1996) and Hoff and Martin (1986) for the higher incidence of indoor soccer injuries as compared to outdoor soccer injuries included; a smaller playing area, the use of walls and the artificial playing surface. This view was shared by Lindenfeld et al., (1994) who stated that the reason for higher injury rates for indoor soccer was a result of the fast-paced,

aggressive style common to indoor soccer, combined with the relatively small enclosed space, lead to more player contact and collisions than that which occurred in outdoor soccer.

2.11 The profile of injury areas found in indoor and outdoor soccer players

2.11.1 Injury profile of Outdoor soccer

A study by Schmidt-Olsen et al., (1985), reported that lower extremity injuries accounted for a large percentage of total soccer injuries. This was supported by Maehlum et al., (1986), in the analysis of injuries by anatomic site which showed that lower extremity injuries account for 61% of all injuries.

A study by Schmidt-Olsen et al., (1991) on injuries among young soccer players who presented at the Aalborg Hospital in Denmark during the course of one year showed similar results of high lower limb injury. A total of 496 male soccer players presented with injuries. The study showed that groin injury accounted for 7.1% of total injuries; hip and thigh accounting for 1.8%; knee injuries accounting for 26%; ankle injuries accounting for 23.1% and foot injuries accounting for 0.3% of all soccer related injuries (Schmidt-Olsen et al., 1991). Routley et al., (1993) concurred with Schmidt-Olsen et al., (1991), which showed high incidences of knee and ankle injuries.

Routley et al., (1993) published an article comparing the adult injury rates and profile of various sports, which presented to the emergency departments of five hospitals in Australia. These sports included; Australian Rules football, soccer, basketball, netball, cricket and rugby. In terms of soccer, the injuries profiled by body region indicated that 32% affected the foot & ankle, 26% knee, 15% elbow, 11% head, 9% wrist and hand, 5% lower back and 2% other. The study also

reported indoor and outdoor soccer injuries, with indoor players three times as likely to get ankle injuries compared to outdoor soccer.

The results achieved by Schmidt-Olsen et al., (1991) and Routley et al., (1993) were however limited in setting as compared to a generalised injury profile as they only reported those injuries that presented to the emergency/outpatient department of a hospital.

A study undertaken by Price et al., (2004) aimed at investigating injuries sustained in an English youth academy over 2 competitive seasons. The study was done at 38 academies with medical staff filling in injury audit questionnaires. This study contrasted with Schmidt-Olsen et al., (1991) due to the higher rates of thigh injury (19%) but similar in that the ankle (19%) and knee (18%) were also commonly injured. These results may have been due to the fact that (Price et al., 2004) was not hospital based, but still required the soccer players to attend a medical setting. As a result the injury would need to have been of sufficient severity warranting medical care as described by the player.

A non-hospital based study of Collegiate Men's Soccer Injuries by Agel et al., (2007), reported the frequency of injury to 5 general body parts. Head/neck accounted for 12.8%, upper extremity accounted for 6.8%, trunk/back accounted for 10.5, lower extremity accounted for 67.3% and other/system accounted for 2.6%. Ankle ligament sprains and knee internal derangements combined accounted for 28.0% of game injuries, with concussions accounting for another 5.8%.

2.11.2 Injury profile of Indoor soccer

With respect to injury profile research on indoor soccer injuries, the literature seems to be limited. A research by Hoff and Martin (1986) showed that like for

outdoor soccer, the lower extremity accounted for the most injuries in indoor soccer players. This was followed by head and face, trunk and upper extremity. The researchers posted questionnaires to all participants at the end of the season requiring them to complete details of their injuries over the past season. Lindenfeld et al., (1994) also reported the incidence of injury in indoor soccer, showed that the lower extremity was the most injured extremity. The ankle and the knee were the most injured part of the body with 23% each. This study used medical personnel who were observing at an indoor arena for seven weeks to record the injuries.

This was supported Castle et al., (1996), who did a study at The Lake Placid Dawn to Dark Soccer tournament, showed that 65.8% of the injuries were mild with 71.4% of the injuries occurring in the lower extremities. Ankle sprains were the most common injuries and combined ligamentous injuries to the knee. Castle et al., (1996) also stated a similarity in the types of injuries sustained by indoor and outdoor soccer players. Hoff et al., (1986), in a study on indoor and outdoor injuries in youth players, compared the classification (table 2.1) and the localization (table 2.2) of injury. The total sample included 40 indoor and 63 outdoor players.

Table 2.1: Classification of injury by type

<u>Injury</u>	<u>Outdoor Soccer</u>	<u>Indoor Soccer</u>
Strain	11	17
Sprain	16	30
Contusion	8	14
Fracture	1	6
Dislocation		1
Other ¹	10	6
Total	46	74

(Hoff et al., 1986)**Table 2.2: Location of injuries**

<u>Body site</u>	<u>Outdoor Soccer</u>		<u>Indoor Soccer</u>	
	No.	%	No.	%
Head and face	10	22	6	8

¹ Injury to the head or face

Trunk	4	8	11	15
Upper extremity	3	6	14	20
Lower extremity	29	63	43	58
Total	46		74	

(Hoff et al., 1986)

Chapter Three

MATERIALS AND METHODS

3.1 Introduction

This chapter aims to describe the research methodology as well as collecting data and their analysis.

3.2 Research Design:

A quantitative questionnaire based study in the investigation of soccer injuries found in selected amateur league outdoor and indoor soccer players in the greater Durban area.

3.3 Sampling

3.3.1 Method

A self-administered questionnaire was distributed to gather the relevant information. In general, according to Mouton (1996), questionnaires are a good source of information, provided that the questionnaire had been demonstrated to be reliable and valid. A non-probability, convenience, self-selecting sampling technique was used. The total number of outdoor soccer players in the Supersport Corporate league from last season was 70 (10 players in 7 teams). The KZN indoor soccer league chosen consists of 77 players (7 players in 11 teams). The maximum sample size was 147 participants and the minimum was 103 (70%) with 30% set aside for participants falling under the exclusion criteria. Each of the outdoor and indoor players from teams from the previous season will be selected provided they fit the inclusion and exclusion criteria.

3.4 Inclusion and exclusion criteria:

The Supersport Corporate outdoor league and the KZN indoor soccer league was chosen because of the similarity of player age, ability and frequency of participation. The study will be limited to soccer players residing in the province of KwaZulu-Natal. There are 10 teams in the Supersport Corporate outdoor league with 7 teams that participated the previous year. Each of the 7 outdoor teams took part in the study. To determine which one of the four indoor leagues to be sampled, the hat method was used and the Thursday league was chosen which contains 11 teams. Indoor and outdoor soccer players will be incorporated into the sample provided they fit into the inclusion and exclusion criteria.

3.4.1 Inclusion criteria:

- Participants who participated in the KZN indoor soccer league from the previous season.
- Participants who participated in the Supersport Corporate outdoor league.

3.4.2 Exclusion criteria:

- Participants who play in both the KZN indoor soccer league and the Supersport Corporate outdoor league at the same time.
- Participants who have not played indoor or outdoor soccer during the previous season.

3.4.3 Limitations:

- Any incomplete questionnaires with missing data were reflected as such.

3.5 Procedure:

The heads of departments of the KZN indoor soccer league in Durban as well as the Supersport outdoor league will be contacted regarding permission (Appendix A). Once permission has been granted from the heads of each league, a Letter of

Information (Appendix B) and an Informed Consent Form (Appendix D) shall be distributed and signed by the soccer players involved in the study. The indoor soccer players were reached to complete the Questionnaire (Appendix C) at their match days at the Gale street indoor soccer arena and the outdoor players were contacted during their training sessions and/or match days. If they were unable to do so then the researcher personally delivered and collected the questionnaire. The researcher was present to answer any questions posed by the participants. In the case of participants having difficulty in understanding English, a bilingual Zulu translator accompanied the researcher in every interaction with the participants. This, however, could have increased bias as subjects may have answered differently than they would have if it were anonymous (Mouton, 1996).

Each soccer player will receive an envelope containing:

- A Letter of Information (Appendix B),
- An Informed Consent Form (Appendix D),
- Questionnaire (Appendix C),

3.6 Measurement tool

3.6.1 Questionnaire Development:

This Questionnaire was developed by reading through previous sports injury questionnaires by Twizere (2004), Adamson (2005) and Balding (2003). These questionnaires were adapted for this questionnaire.

3.6.2 Focus group:

According to Salant and Dillman (1994), for a focus group to show the best results, at least 8 to 11 participants are required. The group used in this study consisted of nine participants. They included; outdoor soccer players, indoor players, a coach, students with experience in the treatment of soccer injuries and a chiropractor who deals in sports injuries.

Salant and Dillman (1994) stated that the reason for holding the focus group was to initiate participants to think about the research topic and to encourage them to develop their own ideas about the questionnaire. Focus groups therefore increases the relevance of the research.

Sessions were tape-recorded by the supervisor (Dr Korporaal), which was allowed by the participants, and an observer (researcher) also took notes on the discussion (Silverman, 2001). Therefore, a DVD of the proceedings (Appendix 11) was made and is available as evidence of the individuals involved and the content of the discussion. (The DVD is available upon request through the department of chiropractic).

Before commencing, each participant was required to read an Information Letter (Appendix E), and sign an Informed Consent Form (Appendix F) as well as a Statement of Confidentiality (Appendix G) and a Code of Conduct (Appendix I). In the focus group each participant was given a copy of the Injury Profile Questionnaire (Appendix H). Comment was requested from the participants on how the Questionnaire could be modified in order for it to be used to accurately assess soccer injuries.

The questions were discussed in sequential order. If inconsistencies were found or changes proposed, a unanimous decision was made to institute the change. A video of the proceedings was made and is available as evidence of the individuals involved and the content of the discussion.

3.6.2.1 Focus Group changes to the questionnaire

The following changes were made to the proposed Appendix H and the amended version constitutes Appendix H:

- The statement 'If you have played professional soccer in the past season then don't continue' was inserted at the beginning of the questionnaire.

Part A: Identification

- The name of the player was removed.
- The word race was changed to ethnicity and blocks indicating Black, White, Coloured, Indian and Other were inserted.
- Description of the leagues were expanded with Outdoor changed to Outdoor (Supersport Corporate league and Indoor changed to Indoor (Gale street).
- The statement, 'If you are a player in outdoor and indoor leagues at the same time then don't continue' was added.
- The question, 'Number of years as a player in this current league as described in question 3' was added.
- The question, 'How many games/training sessions per week have you participated in the past season' was added.
- The questions, 'Do you participate in any other sports?' as well as 'If yes, please specify' was added.

Part B: History of injury

- The question, 'Do you have any pre-existing medical condition? (Anemia's, Diabetes, Osteoporosis, hypertension etc.)' was added.
- The question, 'Which of the following injuries did you sustain (One or more answers are possible)' was added with blocks for; Soft tissue trauma/ Ankle injuries, Knee/ Thigh injuries, Head and facial injuries, Lower leg injuries and Foot injuries.
- The statement, 'In the questions below, please base your answers on your most severe injury if the answer to the above question was greater than one' was changed to, 'In the questions below, please base your answers on the three most severe injuries if the answer to the above question was greater than one'.

- The question, 'Which were the injury mechanisms in the following periods?', were asked for injury one, injury two and injury three. The block, 'Burns(Grass/Carpet)', was also added.
- The rest of the questions in this section were also asked for injury one, injury two and injury three.
- The block for medical was changed to GP and the blocks Sports Massage, Biokineticists and Fieldside was added.
- The question, 'How long since the injury have you gone for treatment?' was added.
- The wording, 'If Chiropractic, what kind of treatment or advice did you receive following injury? (One or more answers are possible)' was changed to, 'What kind of treatment or advice did you receive following injury? (One or more answers are possible).' The blocks, Surgery, Injectibles, Oral Medication and Dry Needling' were added.
- The wording, 'Did you get facilities to access chiropractic services when required?' was changed to 'Did you get facilities to access health care services on site?'
- The question, 'Which health care services can you access after the game?' was added.
- The question, 'Do you know about chiropractic treatment?' was added.
- The wording, 'Do you think chiropractic treatment was needed/helpful for your injuries?' was changed to 'If you have been to a chiropractor, do you think chiropractic treatment was needed/helpful for your injuries?'

Part C: Protective equipment

- The question, 'If Yes, specify the reason' was added to 'Do you wear ankle protection?'
- The question, 'Do you wear appropriate footwear/shoes?' were changed to 'What footwear do you wear when playing?'

Part D: Injury countermeasures programme

- The question, 'What does it consist of?' with blocks for Calves, Thighs, Lower back, Arms and Head and Neck was added.
- The question, 'Do you have a cool-down period at the completion of the following sessions?' was changed to, 'Do you have a post match stretch at the completion of the following sessions?'
- The questions, 'Do you stretch the major leg muscles (calf, hamstring, quadriceps) in the following situations?' and 'Do you undertake flexibility training (not included as part of a warm up or cool down)?', were removed.
- The question, 'What alternative fitness activity outside the teams training schedule do you participate in? (One or more answers are possible)?' was added with blocks for Weight training, Running, Cycling, Swimming, Spinning and Other, added.

Part E: Nutritional Advice

- The questions, 'Have you received professional nutritional advice?' and 'If Yes, from whom?' were added with blocks for GP, Physiotherapy, Self treatment, Chiropractic, None, Sports massage, Biokineticist, Fieldside and Other.
- The question, 'Do you follow any special diet?' with blocks for Vegetarian, Vegan and Other were added.
- The question, 'What is the quantity of water intake during the following sessions?' was changed to 'How many glasses is your water intake during the following sessions?'
- The question, 'Do you take any additional supplementation? (One or more answers are possible)?' was added with blocks for Sports/energy drinks, Protein supplements, Creatine, Multivitamins, Vitamin injections and Other.

3.6.3 Pilot study:

The refined Questionnaire was then being reviewed in a pilot study. The purpose of the pilot study was to ascertain the following information (Fink and Kosecoff, 1985 and Hicks, 2004):

- Were there questions that were misleading to the respondent?
- Were the questions appropriate for the respondents participating in the survey?
- Would the questionnaire yield the correct and necessary information?
- Would the researcher be able to use the information collected in the survey correctly?
- Whether a reasonable amount of time has been allocated for the task.
- Whether or not the instructions are clearly understood by the respondents.

The questionnaire, following the changes made by the focus group / departmental meeting, was sent to four respondents. The respondents chosen were representative of the study group to be researched. They were required to answer the Questionnaire (Appendix H), to determine if the Questionnaire is understandable and simple to complete. It was judged in terms of its readability, simplicity and whether the instructions to the Questionnaire are simple and easy to understand. Members involved in the pilot study had to further amend the Questionnaire so that the final Questionnaire could be produced and completed by the indoor and outdoor soccer players.

3.6.3.1 Pilot study changes to the questionnaire

The following changes were affected to Appendix 8 and the amended version constitutes Appendix C:

Part A: Identification

- The question, 'Team', was removed.

Part B: History of injury

- The blocks wrist, elbow, shoulder, chest, abdomen, genital and back were added.
- The questions, 'Do you know about chiropractic treatment?' and 'If Yes, what limited your access?' were removed.
- The question, 'If you have been to a chiropractor, do you think chiropractic treatment was needed/helpful for your injuries?' was also removed.

Parts D and E were removed from the questionnaire.

3.6.4 Final Questionnaire discussion:

- Participants will fill in the questionnaire with respect to:
- Participant identification including age, ethnicity, league played, number of years as a player, playing position.
- Location of injury
- Mechanism of injury
- Treatment received
- Protective equipment worn

3.7 Statistical analysis:

SPSS version 15.0 (SPSS Inc., Chicago, Illinois, USA) was used for analysis of data. A p value of <0.05 was considered as statistically significant.

Descriptive statistics involved the use of frequency tables and bar or pie charts in the case of categorical variables, while median, quartiles and range was used to describe quantitative variables. Comparisons between the outdoor and indoor divisions in terms of quantitative variables was achieved using non parametric

Mann - Whitney tests. For categorical variables, Pearson's chi square tests were used (Esterhuizen, 2007).

Relationships between quantitative demographic variables and number of injuries and sessions missed were assessed using Spearman's rho correlation. A correlation coefficient of ≥ 0.6 was considered as clinically significant. Mann Whitney tests and Kruskal Wallis tests were used to compare the median number of injuries and sessions missed between demographic groups. Spearman's correlation was used to assess relationships between use of protective equipment (likert scale) and number and severity of injuries sustained (Esterhuizen, 2007).

Chapter Four

RESULTS

4. 1 Introduction

Results of the statistical analysis of the data are presented in this section. Firstly, a descriptive analysis is presented, followed by analytical analysis, which reports proportions and means. These results will be discussed in the context of the literature available to date.

4.2 Data

4. 2. 1 Primary Data:

The data collected from the questionnaire/ participant responses and the data obtained once the statistical analysis was complete (Appendix 3).

4. 2. 2 Secondary Data:

The data in the literature, Internet, books, journals etc. with which to compare the outcome of the results in the research study.

4.3 Key for abbreviations

P value: is the Probability of your results being due to chance or random error and if the p value is a very small one can conclude that the results are significant (Hicks, 2004).

N: total Number of scores (Hicks, 2004).

n: sample size (Hicks, 2004).

4.4 Response rates

A total of 103 out of a possible 126 players participated in the study with 21 soccer players fell into the exclusion criteria and therefore could not participate. There were 41 outdoor and 62 indoor players. The 44 soccer players who did not participate included; 23 players who did not want to participate due to a personal decision.

The response rate of the participants was 70%, which was also the minimum set sample response rate as discussed in Chapter 3. A possible reason for the high response rate is that the soccer players had to complete the questionnaire at the soccer fields at a given time, as they were not allowed to take the questionnaire home. The researcher waited for the questionnaires to be completed on the day and collected it thereafter. Also, the researcher administered the questionnaires to the soccer players on all the occasions and had direct contact with the soccer players and this potentially would have resulted in an increase in the response rates (Russell, et al. 2004).

4.5 Results

4.5.1 Objective 1: To establish a demographic profile of amateur soccer players in greater Durban area

A total of 41 outdoor players and 62 indoor players participated in the study (n=103). Their demographics and sporting history are shown in Tables 4.1 and 4.2. In terms of ethnicity, the majority of both the outdoor (46.3%) and indoor (46.8%) participants were Indian. The ages of the two groups were similar, as was their length of time as a player and with their current league. The indoor players tended to play fewer games or training sessions than the outdoor players.

Table 4.1: Demographics and sport history of study participants by division

	Division
--	----------

		Outdoor		Indoor		Total	
		Count n=41	Column N %	Count n=62	Column N %	Count n=103	Column N %
Ethnicity	Black	15	36.6%	19	30.6%	34	33.0%
	White	3	7.3%	11	17.7%	14	13.6%
	Coloured	4	9.8%	3	4.8%	7	6.8%
	Indian	19	46.3%	29	46.8%	48	46.6%
Position	any position	1	2.4%	2	3.2%	3	2.9%
	defender	10	24.4%	14	22.6%	24	23.3%
	forward	0	.0%	1	1.6%	1	1.0%
	goalkeeper	2	4.9%	7	11.3%	9	8.7%
	midfield	12	29.3%	17	27.4%	29	28.2%
	striker	16	39.0%	21	33.9%	37	35.9%
How many games or training sessions per week	0-2	18	42.5%	50	80.6%	68	65.7%
	2-4	23	57.5%	9	14.5%	32	31.4%
	>4	0	.0%	3	4.8%	3	2.9%
Other sports	yes	13	31.7%	21	33.9%	34	33.0%
	no	28	68.3%	41	66.1%	69	67.0%
Medical condition	yes	1	2.4%	5	8.2%	6	5.9%
	no	40	97.6%	56	91.8%	96	94.1%

Table 4.2: Demographics and sport history of study participants by division

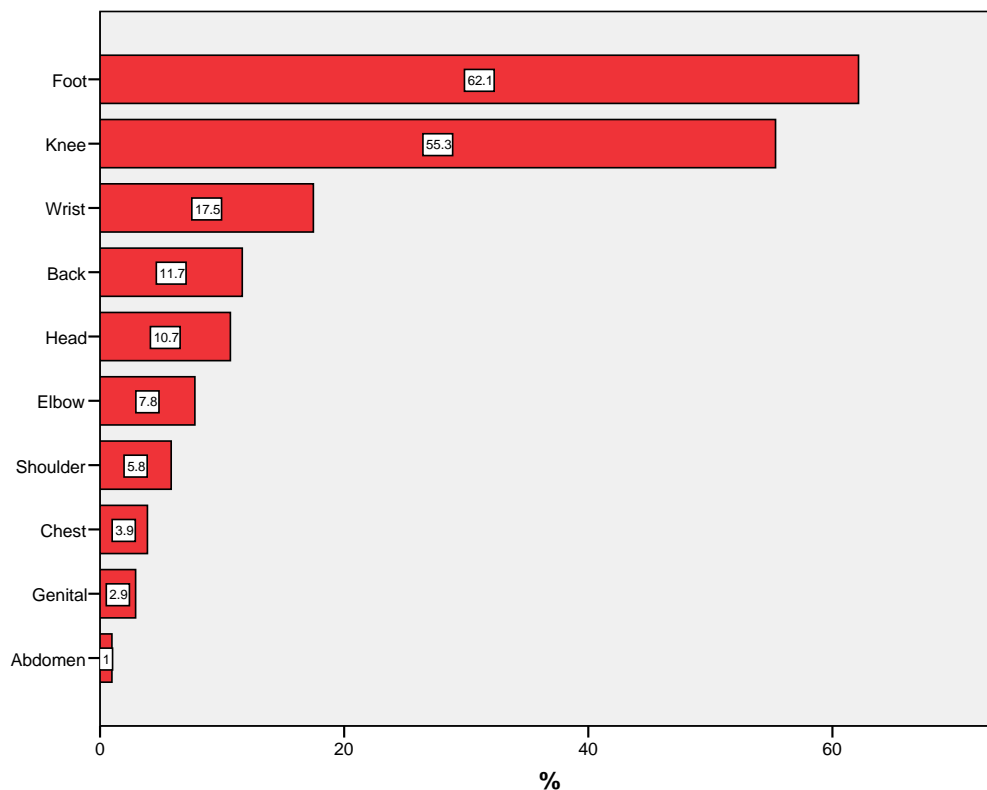
	Division								
	Outdoor			Indoor			Total		
	Mean	Standard Deviation	Range	Mean	Standard Deviation	Range	Mean	Standard Deviation	Range
Age	26	6	18- 41	24	5	18- 37	25	5	18- 41
Number of years as a player	12	6	4- 28	10	6	1- 24	11	6	1- 28
Number of years current league	4	2	2- 10	4	2	1- 10	4	2	1- 10

4.5.2 Objective 2: To establish a representative profile of soccer related injuries over the previous season

4.5.2.1 Site of injuries

All participants had had at least one injury in the last season. Overall the foot was the most frequently injured site (62.1% of players), while more than half had injured their knee (55.3%). The other sites were less frequently injured. These are shown in order of frequency in Figure 4.1.

Figure 4.1: Site of injury in amateur soccer players in Durban



4.5.2.2 Number of injuries

Overall the number of injuries in the last season was higher in matches than in training. The median number of injuries in total was 2, with a range from 1 to 10. The minimum total number of injuries last season was 1, with a maximum number of 10 injuries. This is shown in Table 4.3.

Table 4.3: Number of injuries obtained during training and matches

	Injuries during last season training	Injuries during last season matches	Total injuries in last season
Median	0.00	2.00	2.00
Minimum	0	0	1
Maximum	4	10	10

4.5.2.3 The mechanism of injury

Participants were asked to describe up to three of their most severe injuries in the last season.

Injury 1: The majority occurred in competitive matches (83.5%, n=86) rather than in training. The mechanisms of this injury are shown in Figure 4.2. The majority of injuries occurred from tackling (38.8%), while running produced 16.5% of injuries and landing 14.6%.

Injury 2: Of the 69 participants who reported a second injury, 89.9% (n=62) were hurt during competitive matches rather than training. The mechanism of their second injury is shown in Figure 4.3. The main mechanism was again tackling (28.99%) followed by landing (15.94) and collision (13.04%).

Injury 3: 27 participants reported a third injury. Of these, 74.1% (n=20) were in matches (n=20). The mechanisms are shown in Figure 4.4.

Figure 4.2: Pie chart of mechanism of first injury

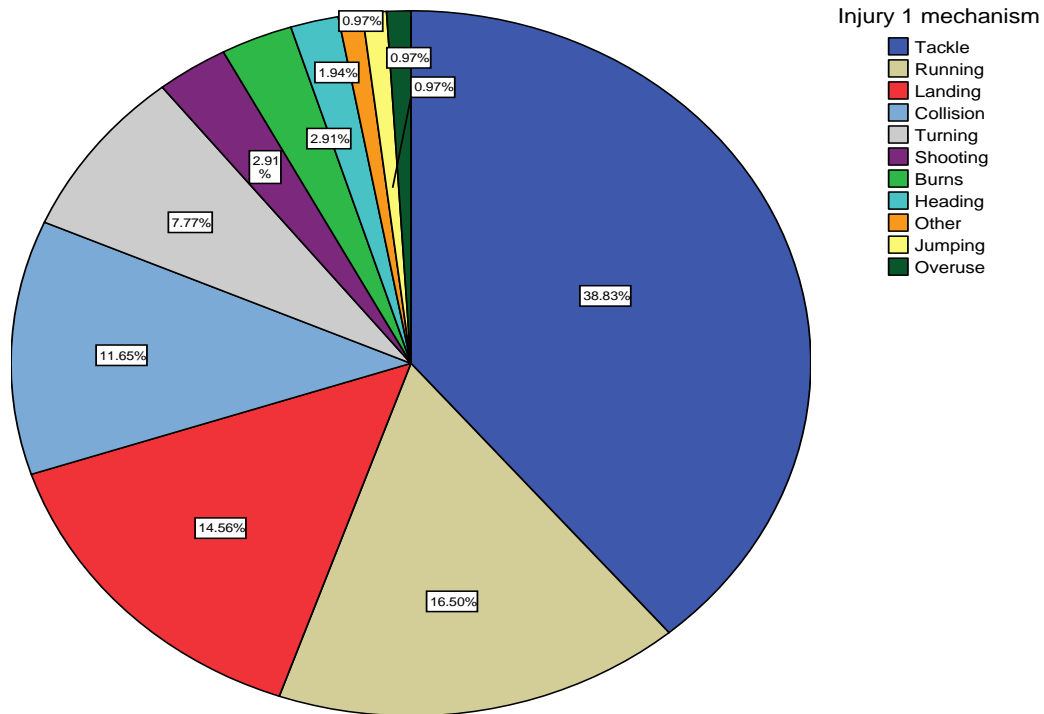


Figure 4.3: Pie chart of mechanism of second injury

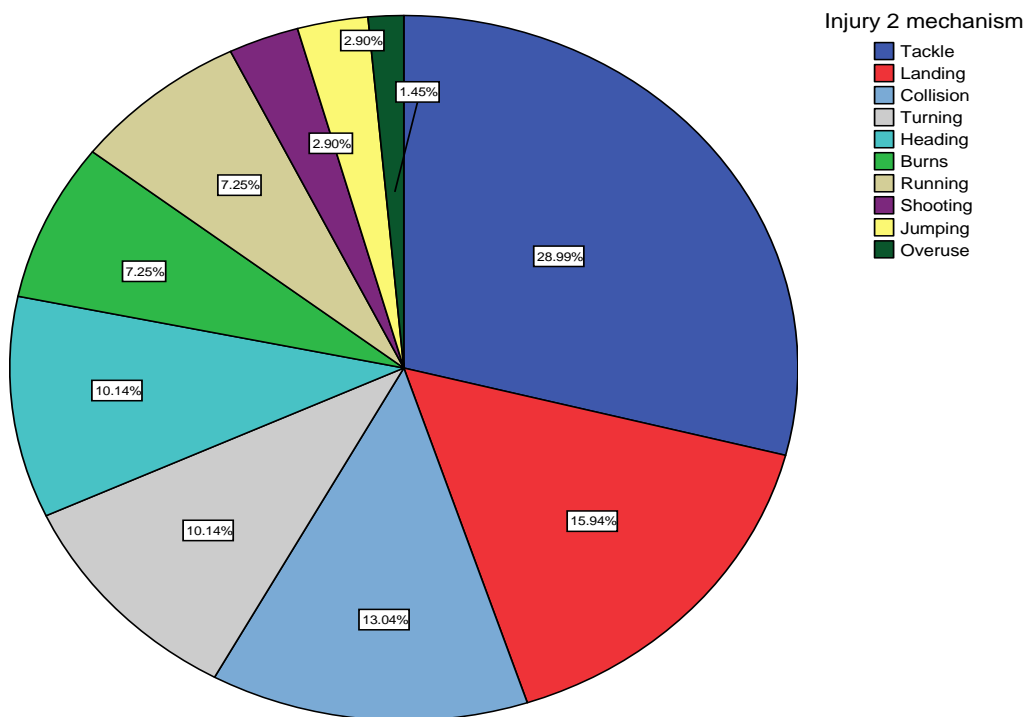
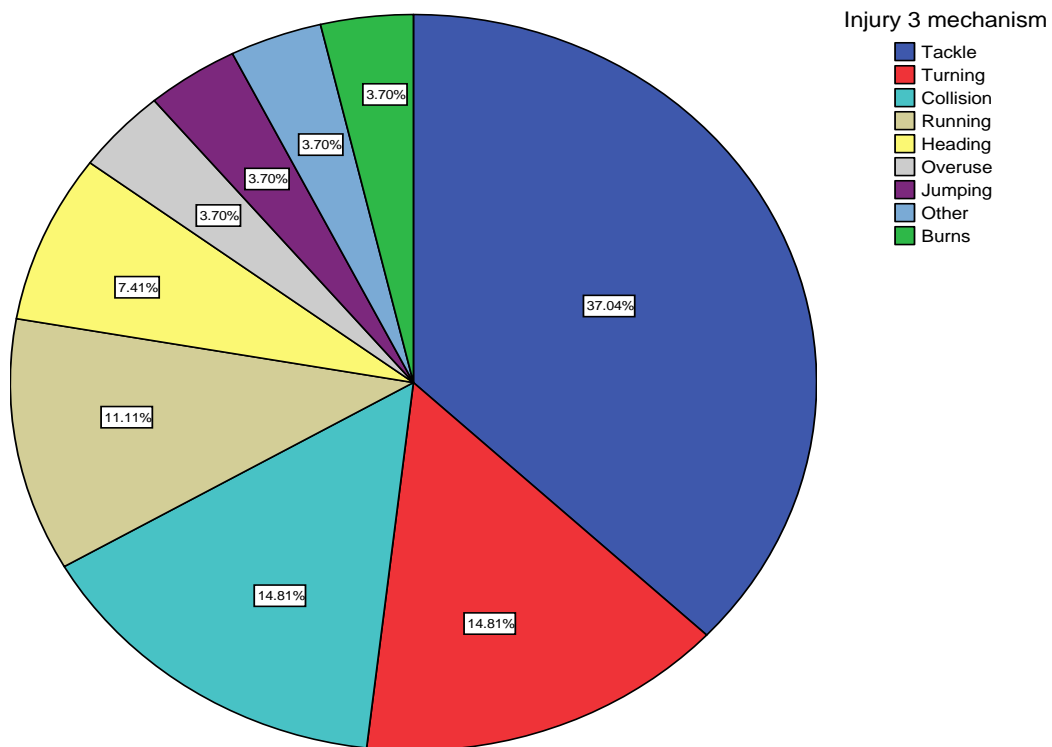


Figure 4.4: Pie chart of mechanism of third injury

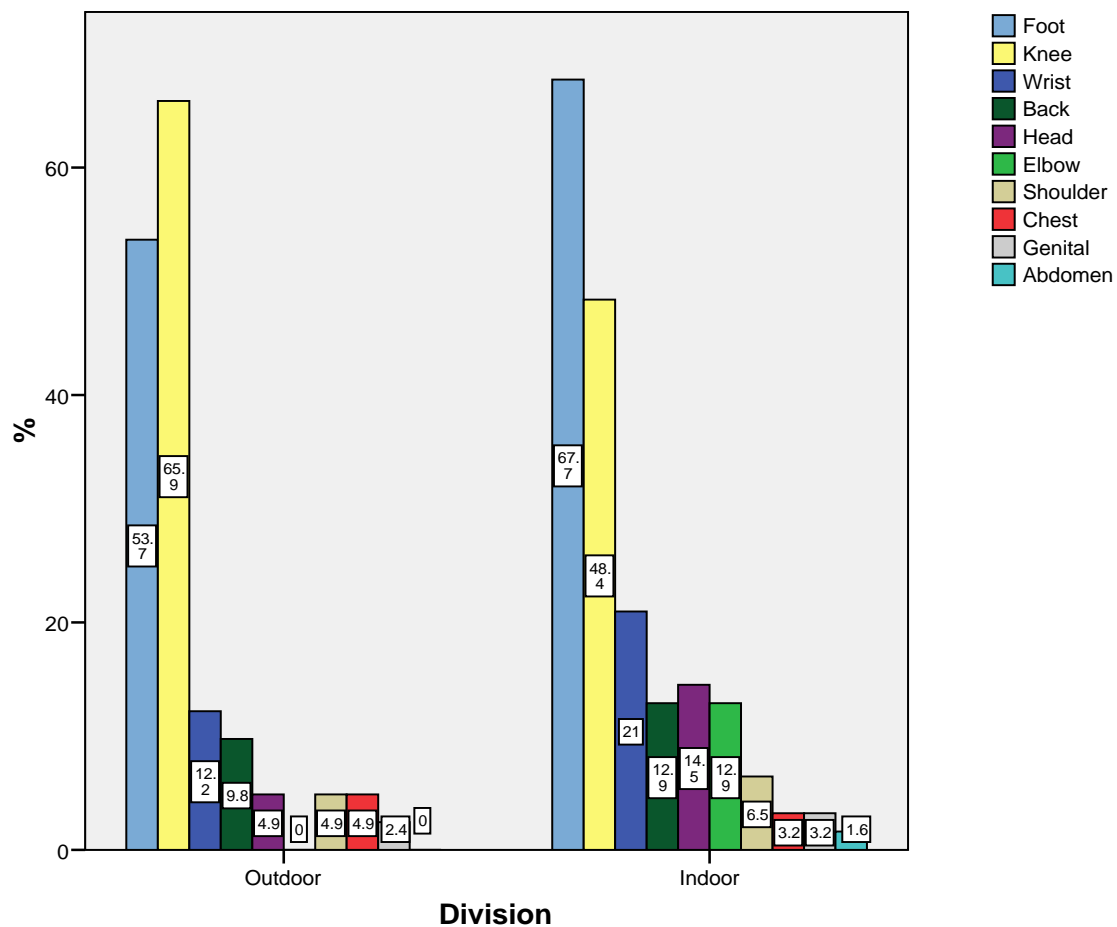


4.5.3 Objective 3: To establish the difference and severity of injuries sustained by indoor and outdoor soccer players

4.5.3.1 Site of injuries

In outdoor soccer players the most common injury was the knee (65.9%) while indoor player the most frequent injury site was the foot (67.7%). The differences in injury site between the divisions was only statistically significant for the elbow ($p=0.020$) where only indoor players reported elbow injuries. The percentage of players in each division reporting specific injuries is shown in Figure 4.5.

Figure 4.5: Injuries sustained over the last season by division



4.5.3.2 Number of injuries

The median number of injuries last season in training sessions in both indoor and outdoor players was 0, with a range from 0 to 4 injuries in outdoor players and 0-2 in indoor players. In matches, there was a higher frequency of injuries, with the median being 1 injury (range 0 to 10) in outdoor players and the median in indoor players being 2 injuries (range 1-5). The median combined total number of injuries in training and matches were 2 injuries for both indoor and outdoor players. This means that on average an amateur player will sustain two injuries in one season. The majority of injuries are sustained in matches. There was no statistically significant difference in median number of injuries in training, matches or overall between the divisions.

Table 4.4: Number of injuries per division in training and matches

Division		Injuries during last season training	Injuries during last season matches	Total injuries in last season
Outdoor	Median	0.00	1.00	2.00
	Minimum	0	0	1
	Maximum	4	10	10
Indoor	Median	0.00	2.00	2.00
	Minimum	0	1	1
	Maximum	2	5	6

Table 4.5: Test Statistics(a)

	Injuries during last season training	Injuries during last season matches	Total injuries in last season
Mann-Whitney U	1036.500	1078.000	1232.000
Wilcoxon W	2989.500	1939.000	3185.000
Z	-2.102	-1.376	-.275
Asymp. Sig. (2-tailed)	0.136	0.169	0.784

a Grouping Variable: Division

4.5.3.3 Impact of the injury

4.5.3.3.1 Missed training and match sessions

Missed training sessions were statistically significantly more common in outdoor players than indoor players ($p < 0.001$), while for both groups the vast majority had missed matches due to injury, so there was no significant difference between the divisions ($p = 0.537$). The frequency and percentages are shown in Table 4.6.

Table 4.6: Impact of the injury on missed training sessions and matches

		Division					
		Outdoor		Indoor		Total	
		Count	Column %	Count	Column %	Count	Column %
Missed training*	yes	22	59.5%	11	19.3%	33	35.1%
	no	15	40.5%	46	80.7%	61	64.9%
Missed matches#	yes	36	97.3%	53	94.6%	89	95.7%
	no	1	2.7%	3	5.4%	4	4.3%

*Pearson's chi square 15.885, $p < 0.001$

Pearson's chi square 0.381, $p = 0.537$

4.5.3.3.2 Total missed training and match sessions

There was a highly significant difference in number of training sessions missed between the divisions ($p < 0.001$). Table 4.7 shows that the outdoor players missed a higher median number of training sessions than indoor players over the season. There was no difference between the divisions in terms of total matches missed ($p = 0.113$).

Table 4.7: Total training sessions and matches missed by players per division

Division		Total training sessions missed	Total matches missed
Outdoor	Median	5.00	4.00
	Minimum	0	0
	Maximum	18	18
Indoor	Median	.00	3.00
	Minimum	0	0
	Maximum	14	14
Total	Median	1.00	3.00
	Minimum	0	0
	Maximum	18	18

Table 4.8: Test Statistics(a)

	Total training sessions missed	Total matches missed
Mann-Whitney U	564.500	1020.000
Wilcoxon W	2455.500	2911.000
Z	-4.992	-1.584
Asymp. Sig. (2-tailed)	<0.001	0.113

a Grouping Variable: Division

4.5.3.4 Treatment received

The types of treatment received for each of up to three injuries are shown in Figures 4.6 to 4.8. Self-treatment was the main treatment used and in each division of each of the injuries described. There were no statistically significant differences between the divisions in terms of treatment.

Figure 4.6: Treatment received for injury 1

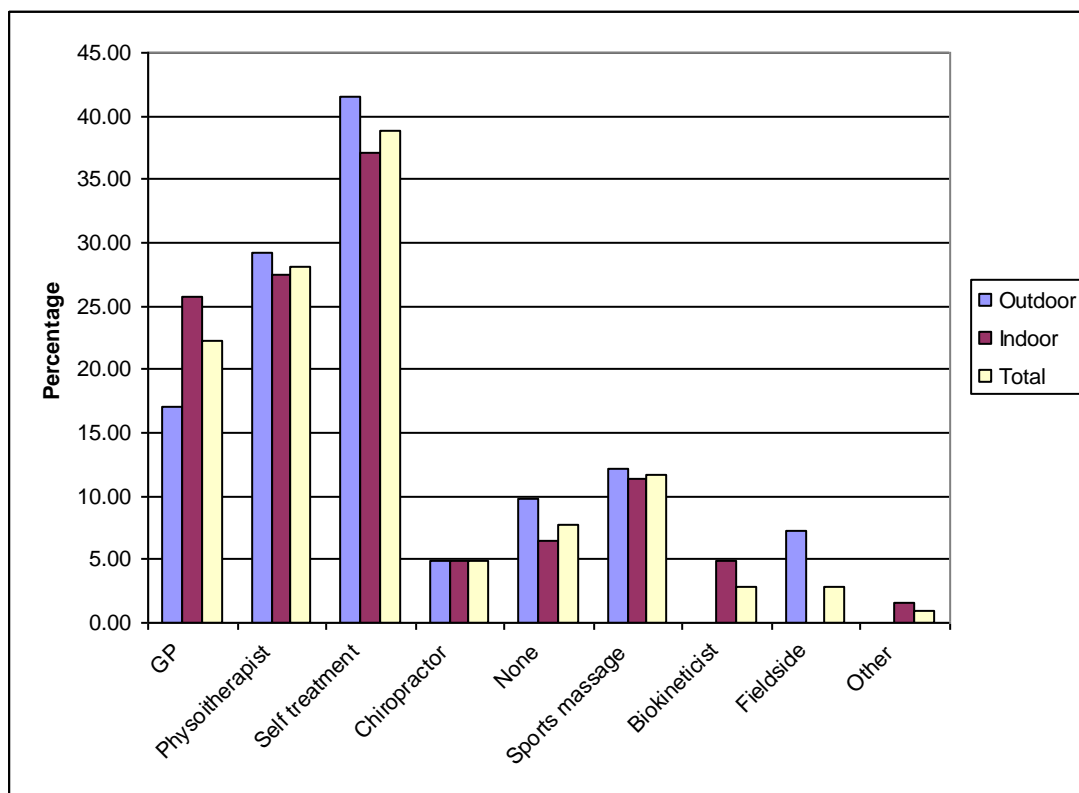
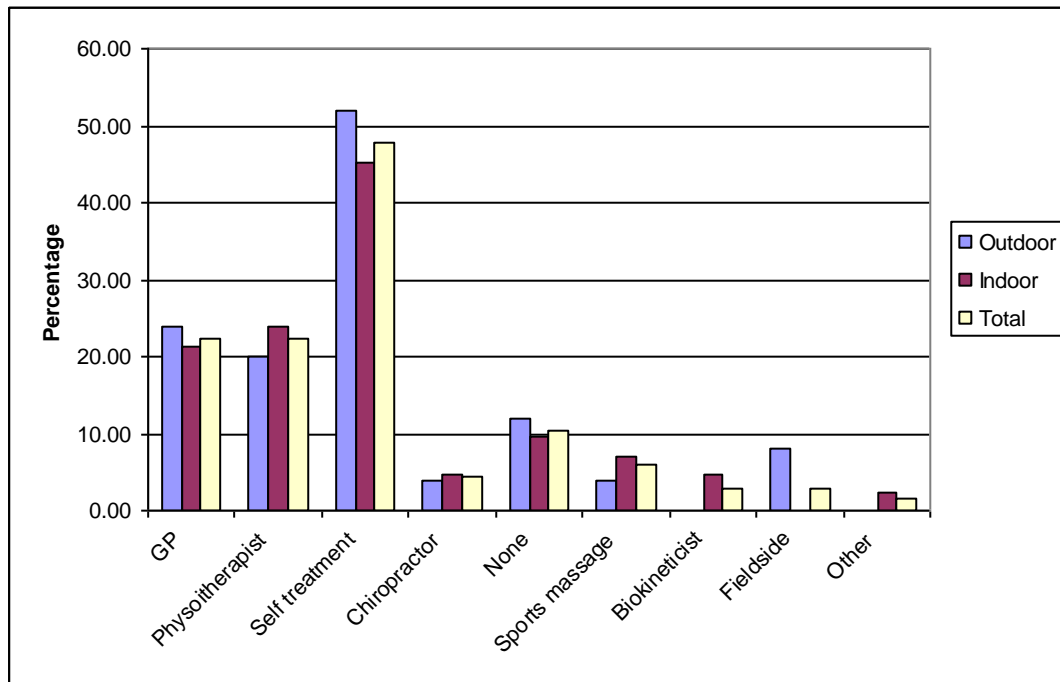
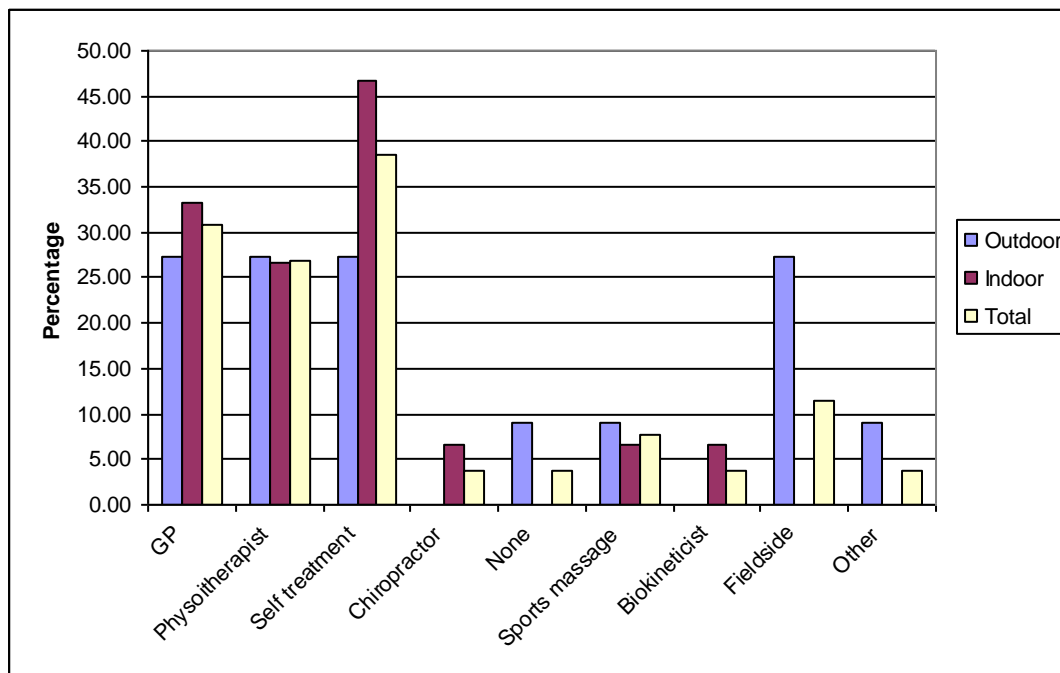


Figure 4.7: Treatment received for injury 2**Figure 4.8: Treatment received for injury 3**

4.5.3.5 Treatment lag

The time before seeking treatment for each injury is shown in Table 4.9. The divisions were similar with respect to the treatment lag period, except in the case of the first injury, where there was a borderline non significant trend towards the outdoor players being less likely to treat their injury immediately ($p=0.055$).

Table 4.9: Treatment lag for each injury by division

		Division					
		Outdoor		Indoor		Total	
		Count	Column N %	Count	Column N %	Count	Column N %
Treatment lag injury 1 n=39 outdoor n=51 indoor total=100	1-3 days	26	66.7%	40	78.4%	66	73.3%
	4-7 days	9	23.1%	3	5.9%	12	13.3%
	>7 days	4	10.3%	8	15.7%	12	13.3%
Treatment lag injury 2 n=23 outdoor n=33 indoor total=56	1-3 days	18	78.3%	26	78.8%	44	78.6%
	4-7 days	4	17.4%	2	6.1%	6	10.7%
	>7 days	1	4.3%	5	15.2%	6	10.7%
Treatment lag injury 3 n=10 outdoor n=11 indoor total=21	1-3 days	7	70.0%	8	72.7%	15	71.4%
	4-7 days	1	10.0%	1	9.1%	2	9.5%
	>7 days	2	20.0%	2	18.2%	4	19.0%

4.5.3.6 Treatment modality

Table 4.9; 4.10 and 4.11 shows the various treatment modalities for Injury 1; 2; and 3. Ice was the most common treatment modality for all 3 injuries described in total, and for each division, except for the first injury where strapping was slightly more common than ice for outdoor players. This was followed by, massage, heat and Non-Steroidal Anti-Inflammatory Drugs (NSAIDS).

Figure 4.9: Treatment modality for injury 1

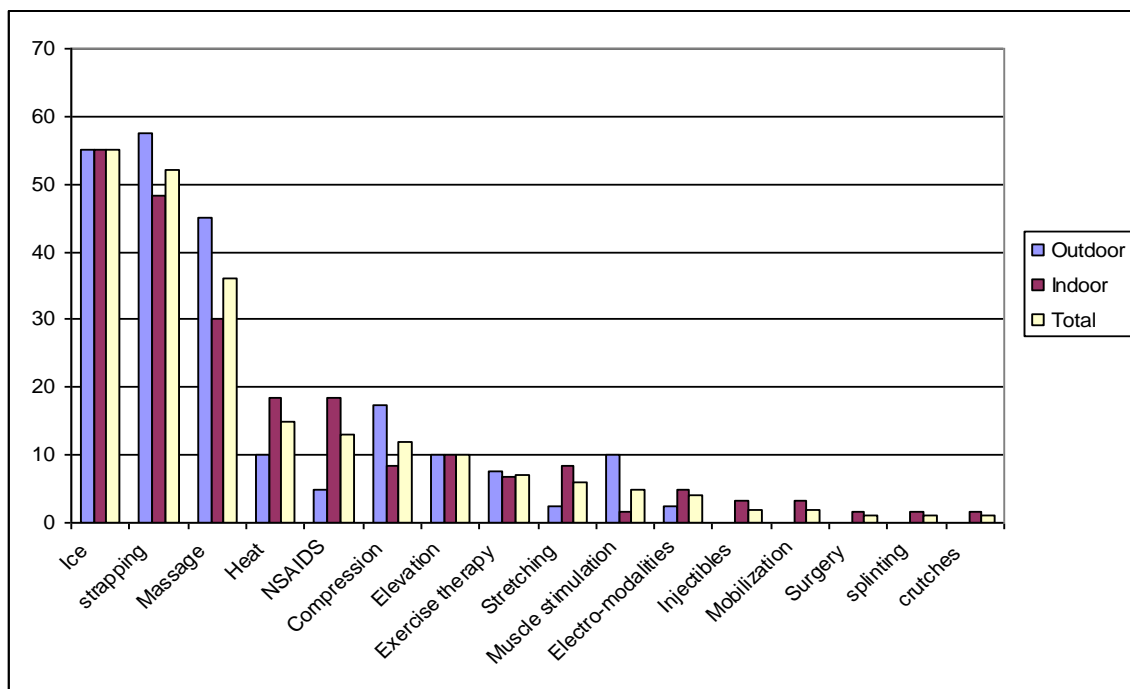
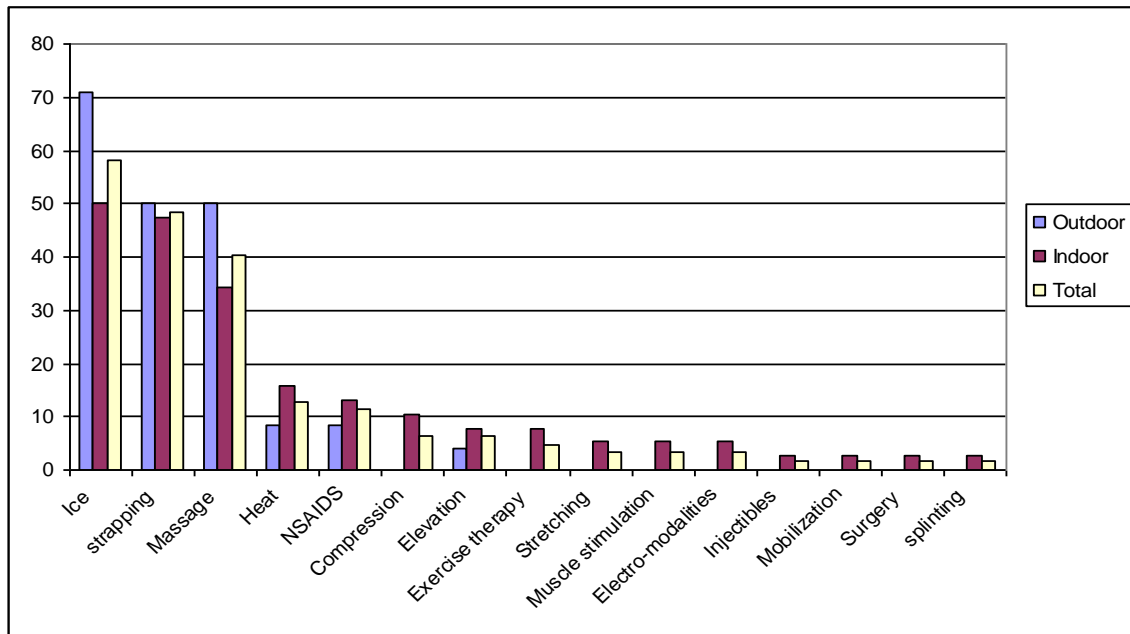
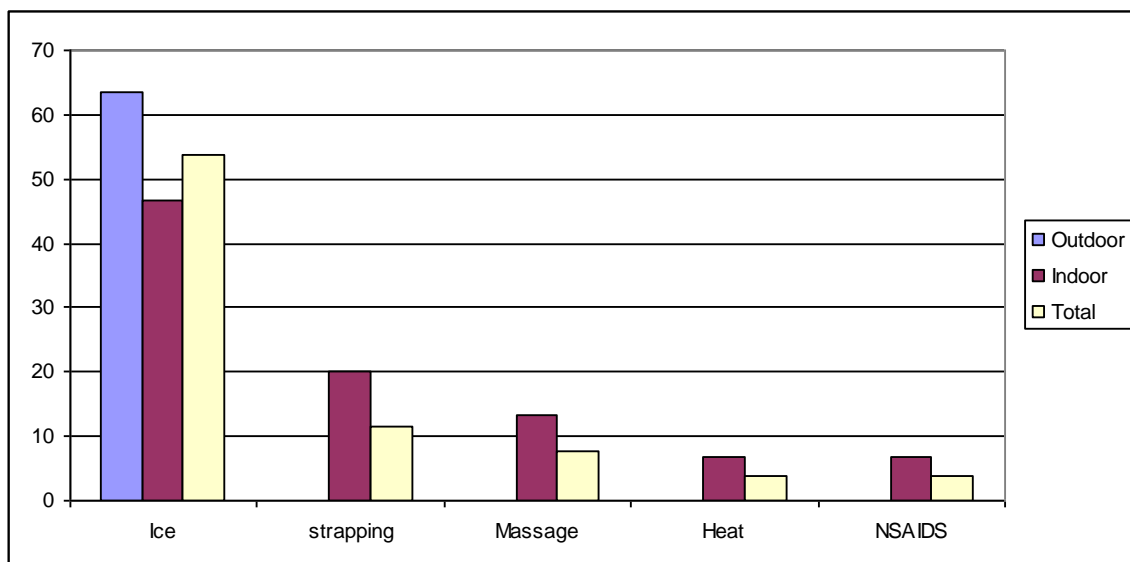


Figure 4.10: Treatment modality for injury 2**Figure 4.11: Treatment modality for injury 3**

4.5.3.7 Advice given

Rest was the most frequent advice given to injured players for all three injuries in both divisions. There was no significant difference in advice given by division.

Table 4.10: Advice given to injured players by injury and division

		Division					
		Outdoor		Indoor		Total	
		Count	Column %	Count	Column %	Count	Column %
Advice Injury 1	Rest/no sport	29	72.5%	34	61.8%	63	66.3%
	Limited sport	4	10.0%	13	23.6%	17	17.9%
	full sport	7	17.5%	8	14.5%	15	15.8%
Advice injury 2	Rest/no sport	12	52.2%	22	56.4%	34	54.8%
	Limited sport	8	34.8%	12	30.8%	20	32.3%
	full sport	3	13.0%	5	12.8%	8	12.9%
Advice injury 3	Rest/no sport	6	60.0%	10	66.7%	16	64.0%
	Limited sport	4	40.0%	5	33.3%	9	36.0%
	full sport	0	.0%	0	.0%	0	.0%

4.5.3.8 Unavailability for training and matches

There was only a significant difference in time of unavailability for matches for the first injury (injury 1) between the two divisions ($p=0.007$). Outdoor players were affected for longer than indoor players. This is shown in Table 4.11.

Table 4.11: Unavailability for training and matches by division

		Division					
		Outdoor		Indoor		Total	
		Count	Column %	Count	Column %	Count	Column %
Unavailable for training injury 1	1-3 days	7	21.9%	7	50.0%	14	30.4%
	4-7 days	9	28.1%	3	21.4%	12	26.1%
	>7 days	16	50.0%	4	28.6%	20	43.5%
Unavailable for training injury 2	1-3 days	9	47.4%	3	33.3%	12	42.9%
	4-7 days	3	15.8%	2	22.2%	5	17.9%
	>7 days	7	36.8%	4	44.4%	11	39.3%
Unavailable for training injury 3	1-3 days	5	62.5%	1	33.3%	6	54.5%
	4-7 days	0	.0%	0	.0%	0	.0%
	>7 days	3	37.5%	2	66.7%	5	45.5%
Unavailable for matches injury 1 *	1-3 days	14	35.9%	38	67.9%	52	54.7%
	4-7 days	8	20.5%	4	7.1%	12	12.6%
	>7 days	17	43.6%	14	25.0%	31	32.6%
Unavailable for matches injury 2	1-3 days	12	57.1%	24	68.6%	36	64.3%
	4-7 days	2	9.5%	5	14.3%	7	12.5%
	>7 days	7	33.3%	6	17.1%	13	23.2%
Unavailable for matches injury 3	1-3 days	4	44.4%	8	57.1%	12	52.2%
	4-7 days	0	.0%	0	.0%	0	.0%
	>7 days	5	55.6%	6	42.9%	11	47.8%

* Pearson's chi square =9.98, p=0.007

4.5.3.9 Access to onsite healthcare

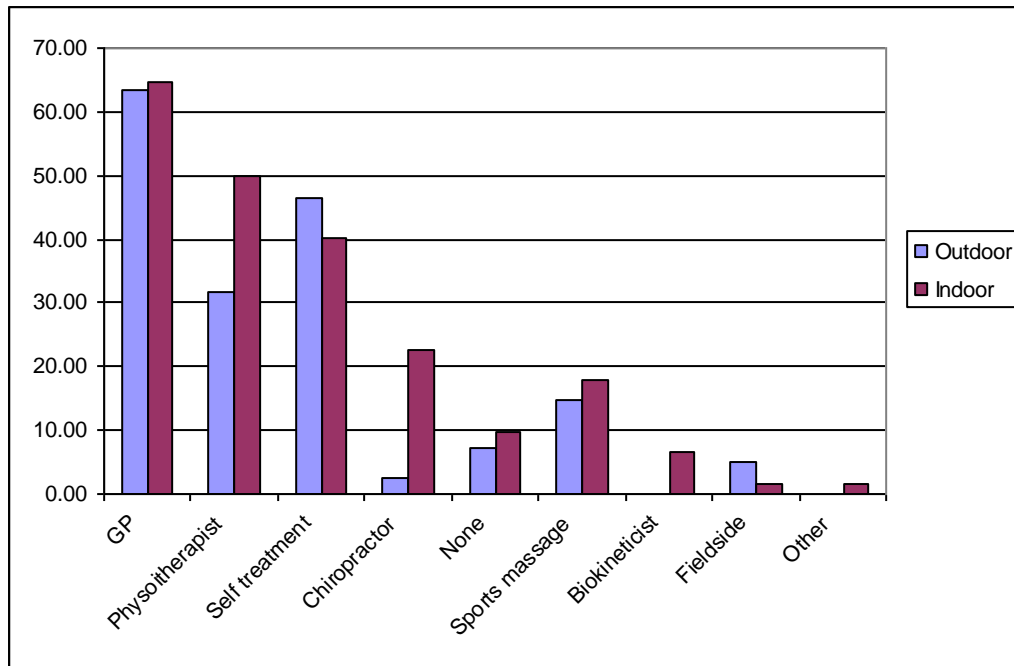
Table 4.12. shows that there was limited access to onsite facilities and this was similar between the divisions ($p=0.416$).

Table 4.12: Access to onsite healthcare facilities by division

			Healthcare services on site					Total
			always	very often	often	sometimes	never	always
Division	Outdoor	Count	4	0	2	3	32	41
		% within Division	9.8%	.0%	4.9%	7.3%	78.0%	100.0%
	Indoor	Count	3	3	1	6	49	62
		% within Division	4.8%	4.8%	1.6%	9.7%	79.0%	100.0%
Total		Count	7	3	3	9	81	103
		% within Division	6.8%	2.9%	2.9%	8.7%	78.6%	100.0%

Pearson's chi square 3.92, $p=0.416$

Figure 4.12 shows that GPs were the main source of professional treatment after the injury in both indoor and outdoor players. Indoor players were significantly more likely to go to a chiropractor than outdoor players ($p=0.005$). There were no other differences between practitioner used and division.

Figure 4.12: Access to services after injury by division

4.5.4 Objective 4: To assess the association between demographics and number and severity of injuries in indoor and outdoor soccer players.

4.5.4.1 Association between demographics and number of injuries:

The Spearman's rho correlations between the quantitative demographic and the number of injuries in all players showed that there were no relationships. This is shown in Table 4.13.

Table 4.13: Spearman's correlation matrix of total injuries by quantitative demographic variables

			Total injuries in last season
Spearman's rho	Age	Correlation Coefficient	0.078
		Sig. (2-tailed)	0.431
		N	103
	Number of years as a player	Correlation Coefficient	0.108
		Sig. (2-tailed)	0.276
		N	103
	Number of years in current league	Correlation Coefficient	-0.006
		Sig. (2-tailed)	0.952
		N	103

Ethnic group was significantly associated with the number of injuries sustained ($p=0.005$), where Indian players sustained significantly more than other players. Playing other sports was also a risk factor for injuries ($p=0.011$). No other factors were significantly associated with number of injuries. This is shown in Table 4.14.

Table 4.14: Comparison of number of injuries by categorical demographics

		Total injuries in last season		
		Median	Percentile 25	Percentile 75
Ethnicity	Black	1.5	1	2
	White	2.0	2	3
	Coloured	2.0	1	3
	Indian	2.0	2	3
	Other	.	.	.
Division	Outdoor	2.0	1	3
	Indoor	2.0	1	3
How many games or training sessions per week	0-2	2.0	1	3
	2-4	2.0	1	3
	>4	3.0	2	6
Position	any position	3.0	2	3
	defender	2.0	1	2
	forward	1.0	1	1
	goalkeeper	2.0	2	2
	midfield	2.0	2	3
	striker	2.0	1	3
Other sports	yes	3.0	2	4
	no	2.0	1	2
Medical condition	yes	2.0	2	2
	no	2.0	1	3

4.5.4.2 Association between demographics and number of sessions missed (severity):

Age was significantly positively correlated with number of sessions missed ($p=0.008$), however, the magnitude of the correlation coefficient was very small, thus not considered as clinically important. No other quantitative demographic variable was related to number of sessions missed (Table 4.15).

Table 4.15: Spearman's correlation matrix of total sessions missed by quantitative demographic variables

			Total sessions missed
Spearman's rho	Age	Correlation Coefficient	0.259(**)
		Sig. (2-tailed)	0.008
		N	102
	Number of years as a player	Correlation Coefficient	0.060
		Sig. (2-tailed)	0.547
		N	102
	Number of years in current league	Correlation Coefficient	0.137
		Sig. (2-tailed)	0.168
		N	102

** Correlation is significant at the 0.01 level (2-tailed).

Outdoor players missed significantly more sessions than indoor players ($p=0.001$). Those who played more matches and training sessions per week tended to miss more ($p<0.001$). No other demographics were associated with number of sessions missed. This is shown in Table 4.16.

Table 4.16: Comparison of number of sessions missed by categorical demographics

		Total sessions missed		
		Median	Percentile 25	Percentile 75
Ethnicity	Black	4.0	2	8
	White	6.0	2	12
	Coloured	12.0	6	15
	Indian	5.0	2	12
Division	Outdoor	9.0	5	12
	Indoor	3.0	2	6
How many games or training sessions per week	0-2	3.0	2	7
	2-4	10.0	6	14
	>4	17.0	6	28
Position	any position	12.0	0	15
	defender	7.0	3	10
	forward	1.0	1	1
	goalkeeper	5.0	3	8
	midfield	5.0	2	12
	striker	4.0	2	9
Other sports	yes	6.0	2	12
	no	5.0	2	10
Medical condition	yes	5.0	3	8
	no	5.0	2	11

4.5.5 Objective 5: To assess the association between number and severity of injuries and protective equipment used by outdoor and indoor soccer players.

Use of protective equipment was on a likert scale with the lower the value, the more likely they were use to protective equipment, thus a positive correlation would indicate that use of the equipment is associated with fewer injuries and training sessions missed. Number of injuries was not correlated with protective equipment used at matches or at training sessions. There was a significant negative correlation between total sessions missed and use of ankle guards at matches ($p=0.015$), although the coefficient was low, thus not clinically important.

Table 4.17: Spearman's correlation between total injuries and sessions missed and the use of protective equipment

			Total injuries in last season	Total sessions missed
Spearman's rho	Total injuries during last season	Correlation Coefficient	1.000	0.408(**)
		Sig. (2-tailed)	.	<0.001
		N	103	102
	Total sessions missed	Correlation Coefficient	0.408(**)	1.000
		Sig. (2-tailed)	<0.001	.
		N	102	102
	Worn shin guards when training	Correlation Coefficient	-0.190	-0.019
		Sig. (2-tailed)	0.191	0.898
		N	49	49
	Worn ankle guards when training	Correlation Coefficient	-0.100	-0.228
		Sig. (2-tailed)	0.500	0.118
		N	48	48
	Do you wear shin guards at matches	Correlation Coefficient	-0.079	-0.177
		Sig. (2-tailed)	0.431	0.076
		N	102	101
	Do you wear ankle guards at matches	Correlation Coefficient	-0.126	-0.244(*)
		Sig. (2-tailed)	0.216	0.015
		N	99	98

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Whether the participant thought their footwear was appropriate or not was not associated with number or severity of injuries. This is shown in Table 4.18.

Table 4.18: Appropriateness of footwear used in training and matches by injury number and severity.

		Total injuries in last season			Total sessions missed		
		Median	Percentile 25	Percentile 75	Median	Percentile 25	Percentile 75
Do you think your training footwear is appropriate?	yes	2.0	1	3	10.0	5	12
	no	2.5	2	3	11.0	6	16
Do you think your match footwear is appropriate?	yes	2.0	1	3	5.0	2	11
	no	2.0	1	3	6.0	2	16

Chapter Five

DISCUSSION OF RESULTS

5.1 Introduction

This chapter will discuss the outcomes of this research as well as the objectives of the research.

5.2 Discussion of results

5.2.1 Response rate

The response rate of this study was 70%. A possible reason for the high response rate is that the soccer players had to complete the questionnaire at the soccer fields at a given time, as they were not allowed to take the questionnaire home. This response rate was similar to a study by Hoff and Martin (1986), who had a response rate of 62.9% and Arnason et al., (1996), with 71% who employed a similar procedure.

5.2.2 The first objective

This initial objective was to establish a demographic profile of amateur soccer players in the greater Durban area.

5.2.2.1 The demographic profile

In terms of ethnicity, the majority of both the indoor and outdoor leagues were Indian players with a total of 46.6%. This was followed by Black players (33%),

White players (13.6%) and Coloured players (6.8%), Table 4.1. This higher Figure of Indian players can be attributed to their population density in the greater Durban area (www.statssa.gov.za).

The age groups, lengths of time playing in the current league were also similar between both leagues (Table 4.2). These similarities allows for a suitable comparison between the leagues and therefore the injury profile of amateur soccer players in the greater Durban area. This will ensure a homogenous sample group, which may enhance research validity. (Mouton, 1996).

5.2.3 The second objective

This second objective was to establish a representative profile of soccer related injuries that players sustain during the previous season.

5.2.3.1 The site and number of injuries

In total, the foot/ankle (62.1%) was the most frequently injured site. This was followed closely by the knee (55.3%), (Figure 4.1). The rest of the sites in descending order were wrist, back, head, elbow, shoulder, chest, genital and abdomen. These sites were less frequently injured. In terms of number of injuries, matches produced more injuries than training. These findings are congruent with the studies by Hoff and Martin (1986), Lindenfeld *et al.*, (1994), Routley *et al.*, (1993), Castle *et al.*, (1996) and Agel *et al.*, (2007).

5.2.3.2 Number of injuries

The median number of injuries in the previous season in training sessions in both indoor and outdoor players was 0, with a range from 0 to 4 in outdoor players and 0-2 in indoor players. The median combined total number of injuries in training and matches were 2 for both indoor and outdoor players (Table 4.3, 4.4).

This means that on average an amateur player will be more likely to sustain two injuries in one season. The majority of injuries are sustained in matches. There was no statistically significant difference in median number of injuries in training, matches or overall between the divisions. This is similar to the literature which highlights the high injury rates of soccer players, irrespective of type (indoor/outdoor) as noted by Dvorak et al., (2000) and Arnason et al., (1996).

5.2.3.3 The mechanism of injury

The participants were asked to describe the three most severe injuries of last season. A total of 103 reported a first injury, 69 participants reported a second injury and 27 participants reported a third injury (Figure 4.2, 4.3 and 4.4). The majority of injuries occurred during tackling, followed by running, landing and collisions.

This contrasted with the study by Chomiak et al., (2000) who reported that forty-six percent of injuries were caused by contact and 54% involved no body contact. This was similar to Hawkins et al., (2001) who stated that 58% of injury mechanisms were classified as being non-contact, therefore it would seem that the majority of injuries were non-contact.

However, a more recent study by Rahnema et al., (2002), who suggested that some playing actions were associated with higher injury risk like receiving a tackle, making a tackle, and receiving a charge. A later study by Agel et al., (2007) showed that most game injuries resulted from contact with another player. Most other-contact injuries occurred through contact with the surface.

5.2.4 The third objective

The third objective was to establish the difference and severity of injuries sustained by indoor and outdoor soccer players.

5.2.4.1 Difference and severity of injuries between indoor and outdoor soccer players

Outdoor soccer players reported the knee as being the most affected area, while indoor soccer players injured the foot/ankle frequently. This was similarly reported by Routley *et al.*, (1993). The only other area that was statistically significant was the elbow, which was only reported by indoor players (Figure 4.5). The reason for this may have been due to the indoor arena having walls, which can lead to collision injuries. The rest of the parts of the body affected were similar between indoor and outdoor soccer players.

5.2.4.2 Impact of injury on matches

In terms of missed training and match sessions, both indoor and outdoor soccer players missed similar numbers of competitive matches because of injury. This was congruent with Castle *et al.*, (1996), who stated a similarity in the types of injuries sustained by indoor and outdoor divisions that restricted their participation in matches. There was a significant difference in the number of training sessions missed between the divisions which was because the outdoor players having significantly more training sessions than indoor soccer players (Table 4.6, 4.7).

5.2.4.3 Treatment received and treatment modality used

Self-treatment was the main treatment used by injured players overall and by each division (Figure 4.6, 4.7 and 4.8) therefore this presents a difference to

hospital/emergency reporting. Statistically there were no differences between the divisions in terms of treatment.

There seems to have been ambiguity between a physiotherapist and a sports massage therapist in terms of the players understanding. Some of the soccer players thought that the two professions were interchangeable and this may have resulted in slightly inaccurate findings in that regard.

5.2.4.4 Treatment lag

The time before seeking treatment were similar between divisions but there was a borderline non significant trend toward outdoor players being less likely to seek treatment for their injury immediately (Injury 1). This could relate to the findings that outdoor players were unavailable for longer periods for injury 1 than indoor players (Table 4.9).

5.2.4.5 Treatment modality and advice given

Ice was the most common treatment modality for the majority of all injuries except for the first injury where strapping was voted by outdoor players as more common than ice. This was followed by massage, heat and NSAIDS (Figure 4.9, 4.10, 4.11). Inklaar (1994) showed that 90% of injuries were treated by physical therapy while 34% were treated by non-steroidal anti-inflammatory drugs (NSAID's).

Rest (i.e. no treatment) was the most frequent advice given to injured players for all three injuries in both divisions, which presents a difference to participants reports of hospital/emergencies. There was no significant difference in advice given by division, therefore advice has no impact in terms of the findings.

5.2.4.6 Unavailability for training and matches

There was a significant difference in time of unavailability for matches for the first injury (injury 1) between the two divisions. Outdoor players were affected for longer than indoor players. This could be related to the treatment lag in outdoor players for injury 1 (Table 4.11).

5.2.4.7 Access to healthcare by division

General Practitioners (GP's) were the main source of treatment after the injury in both indoor and outdoor players. However, indoor players were significantly more likely to go to a chiropractor than outdoor players (Figure 4.12).

5.2.5 The fourth objective

This objective was to determine the relationship and/or association with the demographic profile and severity and number of injuries of the amateur indoor and outdoor soccer players.

5.2.5.1 Association between demographics and number of injuries:

The number of injuries and demographics in all players showed that there were no relationships. Ethnic group was significantly associated with the number of injuries sustained, where Indian players sustained significantly more injuries than other players. This result may be because of the higher number of Indian participants than other ethnic groups (www.statssa.gov.za). Playing other sports was also a risk factor for injuries. No other factors were significantly associated with number of injuries (Table 4.13, 4.14).

5.2.5.2 Association between demographics and number of sessions missed

Age was significantly positively correlated with number of sessions missed, where older participants missed more sessions. This was supported by Lindenfeld et al., (1994), who showed that indoor soccer players showed higher injury rates in older age groups as compared to younger age groups. Chomiak et al., (2000), who did a study on outdoor soccer injuries, concurred with this finding by reporting that age of player increased the risk of injury. However, the magnitude of the correlation coefficient was very small, so not considered as clinically important. This area needs further investigation with a larger sample size. No other quantitative demographic variable was related to number of sessions missed (Table 4.15).

Outdoor players missed significantly more sessions than indoor players. This may have been due to outdoor players participating in more training sessions

than indoor players as well as treatment lag among outdoor players. Those who played more matches and training sessions per week tended to miss more. No other demographics were associated with number of sessions missed (Table 4.16).

5.2.6 The fifth objective

The fifth objective was to assess the association between number and severity of injuries and protective equipment used by outdoor and indoor soccer players.

5.2.6.1 Association between number and severity of injuries and protective equipment used by outdoor and indoor soccer players.

Use of protective equipment was on a likert scale with the lower the value, the more likely they were use to protective equipment, thus a positive correlation would indicate that use of the equipment is associated with fewer injuries and training sessions missed. Number of injuries was not correlated with protective equipment used at matches or at training sessions. There was a significant negative correlation between total sessions missed and use of ankle guards at matches, although the coefficient was low, thus not clinically important (Table 4.17). This is significant because it suggests that the use of protective equipment can decrease injury rates. This also requires further investigation with an increase in sample size, due to the use of ankle guards decreasing missed sessions. This is supported by Bir, et al. (2001). In terms of footwear, whether the participant thought their footwear was appropriate or not was not associated with number or severity of injuries.

5.3 Objectives and the related hypotheses

5.3.1 The first objective

Was to establish a demographic profile of amateur soccer players in the greater Durban area.

Null hypothesis one:

The demographic profile of amateur soccer players in the greater Durban area is not similar to international literature profiling soccer players.

This is not rejected, based on the findings with respect to the local demographic groups that participated in this study.

5.3.2 The second objective

Was to establish a representative profile of soccer related injuries that players sustain during the previous season.

Null hypothesis two:

The injury profile of amateur indoor and outdoor soccer players in the greater Durban area are not congruent with the literature with respect to site, number and mechanism of injury.

This hypothesis is rejected, based on the presence of significant findings, which is congruent with the literature.

5.3.3 The third objective

Was to establish the difference and severity of injuries sustained by indoor and outdoor soccer players.

Null hypothesis three:

Indoor and outdoor soccer players do not show the same site and severity of injuries.

This hypothesis is not rejected based on significant findings with respect to site of injury and sessions missed.

5.3.4 The fourth objective

Was to determine the relationship and/or association with the demographic profile and severity and number of injuries of the amateur indoor and outdoor soccer players.

Null hypothesis four:

The relationship between demographic profile and the severity of injuries of indoor and outdoor soccer players shows no correlation.

This hypothesis is rejected based on findings that ethnicity, age and division show correlation.

5.3.5 The fifth objective

Was to assess the association between number and severity of injuries and protective equipment used by outdoor and indoor soccer players.

Null hypothesis five:

Protective equipment does not play a role in decreasing the number and severity of injuries in indoor and outdoor soccer players.

This hypothesis is rejected based on the findings that show that ankle protection is associated with decreased number of missed sessions but it is not rejected for the use of shin guards.

Chapter Six

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The profile of soccer injuries in selected amateur league indoor and outdoor soccer players in the greater Durban area has been described in this study.

In terms of number of injuries, there seems to be no significant difference between indoor and outdoor soccer players. With regard to site of injuries and the nature of the sport, the lower limb was affected more than any other body part. The outdoor division showed more knee injuries than the indoor division that showed higher incidences of foot/ankle injuries.

In terms of severity, outdoor soccer players missed more training sessions. This was due to the outdoor players participating in more sessions than indoor players, as well as showing a longer duration of time between receiving an injury and receiving treatment.

In terms of age, players showed a marginal increase in injury, as they got older. The use of protective equipment has also shown a marginal decrease in injury rate.

6.2 Recommendations

6.2.1 Recommendations with respect to the study

- A clear definition of the word injury needs to be used instead of allowing the soccer players to use their own subjective definition, which may vary depending on the individual.
- In respect of the questionnaire used, it is suggested that a question regarding the type of injury sustained be included to allow for a better descriptive profile.
- Translation of the questionnaire to Zulu would help in better understanding the questions posed to the Black population.

6.2.2 Recommendations for further studies

- It is suggested that further studies delve into the relationship between age and skill levels and injury rates.
- It is suggested that a quantitative study be carried out to determine the effectiveness of protective equipment affecting injury rates.
- Further research is also needed in the area of preventative measures such as warm-up/stretching regimes, supplementation and liquid intake and how they affect injury rates.

6.3 Limitations

- A limitation exists in that all variables were not controlled for in the associations analysed, thus future studies should look into the effect of different variables on one another and the outcome of the associations as presented in this study.

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APPENDICES

A – Letter of Permission

B – Letter of Information- research participant

C – Post pilot study Questionnaire

D – Informed Consent Form-research participant

E – Letter of Information-focus group

F – Informed Consent Form-focus group

G – Confidentiality Statement-focus group

H – Post Focus group, pre pilot study questionnaire

I – Code of conduct-focus group

J – Pre focus group questionnaire

K – Focus group DVD

L – Appendices CD

M – Ethics Clearance Certificate

Appendix A

LETTER OF PERMISSION

Dear Head Of KZN Indoor Soccer league/ Gale Street Indoor arena and Supersport Corporate league

I am a sixth year chiropractic student at D.U.T. Currently I am undertaking a research project and humbly request your assistance.

Title of Research is : **A profile of soccer injuries in selected league amateur indoor and outdoor soccer players in the greater Durban area.**

Aim/Purpose of study:

Comment [KA1]:

- The demographic profile of players will be established.
- To establish a representative profile of soccer related injuries that players sustain over a set period of time.
- To establish the differences and severity of injuries sustained by indoor and outdoor soccer players.
- Correlations between the demographic profile and the injury profile will be investigated in order to determine their relationship.

Rationale for the Study and Research Questions:

- To increase knowledge by healthcare providers regarding soccer injuries.
- To ensure better patient outcomes in a shorter time period due to the recognition of the common injuries and treatment awareness (care integration).
- To improve methods of injury prevention and prevention strategies.

This research will be done by means of a pre-validated questionnaire that will be administered to the soccer players. I need authorisation to administer the questionnaires to the respective leagues.

I will briefly discuss the research thereafter questionnaires will be handed out along with a consent form and information letter. The questionnaire will take approximately 15 minutes to complete where after the questionnaires and respective documents will be collected. The entire process should take approximately 20 minutes.

Your assistance would be highly appreciated and vital to this research.

Thanking you sincerely
Nigel Archary (0723742023; 031 5022742)

Dr Charmaine Korporaal
Research Supervisor (031-2042611)

Appendix B
LETTER OF INFORMATION – RESEARCH PARTICIPANT

Dear Sir or Madam

I would like to welcome you to my study.

The title of my research project is: **A profile of soccer injuries in selected league amateur indoor and outdoor soccer players in the greater Durban area.**

Aim/Purpose of study:

Comment [KA2]:

- The demographic profile of players will be established.
- To establish a representative profile of soccer related injuries that players sustain over a set period of time.
- To establish the differences and severity of injuries sustained by indoor and outdoor soccer players.
- Correlations between the demographic profile and the injury profile will be investigated in order to determine their relationship.

This research will be done by means of a pre-validated questionnaire that will be administered.

- This questionnaire should not take more than 15 minutes to complete.
- Please answer all questions honestly and to the best of your ability.
- This is not a test.
- There are no wrong answers.

Risks/ Costs: There are no risks or costs associated with taking part in this research.

Benefits:

- To increase knowledge by healthcare providers regarding soccer injuries.
- To ensure better patient outcomes in a shorter time period due to the recognition of the common injuries and treatment awareness (care integration).
- To improve methods of injury prevention and prevention strategies.

As with all surveys, the information will be treated in the utmost confidence. Your time, opinion, and assistance with this project are invaluable and greatly appreciated.

Thanking you sincerely
Nigel Archary (0723742023; 031 5022742)

Dr Charmaine Korporaal
Research Supervisor (031-2042611)

APPENDIX C

POST PILOT STUDY QUESTIONNAIRE FOR SOCCER PLAYERS

All questions are strictly confidential. Please be as truthful as possible and tick one box per question unless otherwise indicated.

IF YOU HAVE PLAYED PROFESSIONAL SOCCER IN THE PAST SEASON THEN DON'T CONTINUE

PART A. IDENTIFICATION

1. Age (years): _____
2. Ethnicity: Black ☐ White ☐ Coloured ☐ Indian ☐ Other _____
3. Division: Outdoor(Discovery corporate league) ☐ Indoor(Gale street) ☐

IF YOU ARE A PLAYER IN OUTDOOR AND INDOOR LEAGUES AT THE SAME TIME THEN DON'T CONTINUE

4. Number of years as a player in outdoor or indoor soccer: _____
5. Number of years as a player in this current league as described in question 3. _____
6. How many games/training sessions per week have you participated in the past season:
0-2 ☐ 2-4 ☐ If greater than 4, please specify how many: _____
7. Playing position: _____
8. Do you participate in any other sports? Yes ☐ No ☐
9. If Yes, please specify: _____

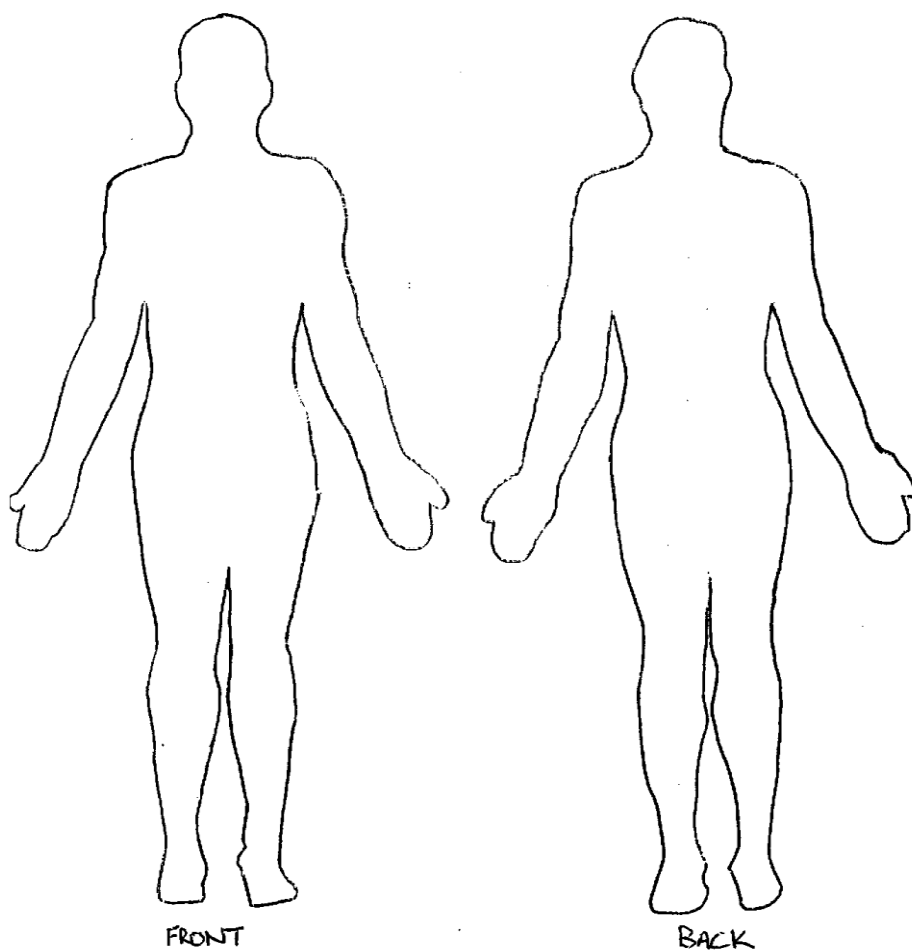
PART B. HISTORY OF INJURY

In the answers you give below, consider only the information over the last season.

1. **Do you have any pre-existing medical condition? (Anemia's, Diabetes, Osteoporosis, hypertension etc.)**

2. **Which of the following injuries did you sustain(One or more answers are possible):**
☐ Wrist ☐ Elbow ☐ Shoulder ☐ Head/Neck/Facial ☐ Knee/ Thigh
☐ Chest ☐ Abdomen ☐ Genital ☐ Foot/Ankle ☐ Back

3. Based on question two, which body parts sustained injury? (Indicate on the illustration)



4. How many injuries have you got/received/sustained during training or competitive session(s)?

Last season

Training sessions: _____

Competitive matches: _____

Season before last

Training sessions: _____

Competitive matches: _____

5. **Has the injury resulted in you missing the following sessions? (More than one answer is possible)**

Training sessions: ☐ Competitive matches: ☐

In the questions below, please base your answers on the three most severe injuries if the answer to the above question is greater than one.

6. **Which were the injury mechanisms in the following periods?**

Injury One:

Training Session

Tackle: ☐ Burns(Grass/Carpet): ☐ Running: ☐ Shooting: ☐
Jumping: ☐ Landing: ☐ Heading: ☐ Turning: ☐ Collision: ☐
Overuse: ☐ Other: _____

Competitive matches

Tackle: ☐ Burns(Grass/Carpet): ☐ Running: ☐ Shooting: ☐
☐ Jumping: ☐ Landing: ☐ Heading: ☐ Turning: ☐
Collision: ☐ Overuse: ☐ Other: _____

Injury Two:

Training Session

Tackle: ☐ Burns(Grass/Carpet): ☐ Running: ☐ Shooting: ☐
Jumping: ☐ Landing: ☐ Heading: ☐ Turning: ☐ Collision: ☐
Overuse: ☐ Other: _____

Competitive matches

Tackle: ☐ Burns(Grass/Carpet): ☐
Running: ☐ Shooting: ☐ Jumping: ☐ Landing: ☐ Heading: ☐
Turning: ☐ Collision: ☐ Overuse: ☐ Other: _____

Injury Three:

Training Session

Tackle: ☐ Burns(Grass/Carpet): ☐ Running: ☐ Shooting: ☐
Jumping: ☐ Landing: ☐ Heading: ☐ Turning: ☐ Collision: ☐
Overuse: ☐ Other: _____

Competitive matches

Tackle: ☐ Burns(Grass/Carpet): ☐ Running: ☐ Shooting: ☐
☐ Jumping: ☐ Landing: ☐ Heading: ☐ Turning: ☐
Collision: ☐ Overuse: ☐ Other: _____

7. How many training sessions and competitive matches did you miss last season as a result of the injury?

Injury One:*Training sessions:*

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

Competitive matches:

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

Injury Two:*Training sessions:*

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

Competitive matches:

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

Injury Three:*Training sessions:*

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

Competitive matches:

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

8. What kind of treatment did you receive following injuries? (One or more answers are possible).

Injury One:

GP: ☐ Physiotherapy: ☐ Self treatment: ☐ Chiropractic: ☐
None: ☐ Sports massage: ☐ Biokineticist: ☐ Fieldside: ☐
Other: _____

Injury Two:

GP: ☐ Physiotherapy: ☐ Self treatment: ☐ Chiropractic: ☐
None: ☐ Sports massage: ☐ Biokineticist: ☐ Fieldside: ☐
Other: _____

Injury Three:

GP: ☐ Physiotherapy: ☐ Self treatment: ☐ Chiropractic: ☐
None: ☐ Sports massage: ☐ Biokineticist: ☐ Fieldside: ☐
Orthopedic surgeons: ☐ Other: _____

9. How long since the injury have you gone for treatment?

Injury One:

1-3 days ☐ 4-7 days ☐ Greater than 7 days ☐

Injury Two:

1-3 days ☐ 4-7 days ☐ Greater than 7 days ☐

Injury Three:

1-3 days ☐ 4-7 days ☐ Greater than 7 days ☐

**10. What kind of treatment or advice did you receive following injury?
(One or more answers are possible).**

Injury One:

Ice/cold: ☐ Compression: ☐ Elevation: ☐ Heat: ☐
Electro-modalities: ☐ Muscle stimulation: ☐ Surgery: ☐ Injectibles: ☐
Joint mobilization: ☐ Massage: ☐ Deep frictions: ☐ Stretching: ☐
Exercise therapy: ☐ Strapping: ☐ Splinting: ☐ Crutch training: ☐
Dry Needling: ☐ Injectibles: ☐ Oral
medication(Anti-inflammatories/NSAIDS): ☐

Injury Two:

Ice/cold: ☐ Compression: ☐ Elevation: ☐ Heat: ☐
Electro-modalities: ☐ Muscle stimulation: ☐ Surgery: ☐ Injectibles: ☐
Joint mobilization: ☐ Massage: ☐ Deep frictions: ☐ Stretching: ☐
Exercise therapy: ☐ Strapping: ☐ Splinting: ☐ Crutch training: ☐
Dry Needling: ☐ Injectibles: ☐ Oral
medication(Anti-inflammatories/NSAIDS): ☐

Injury Three:

Ice/cold: ☐ Compression: ☐ Elevation: ☐ Heat: ☐
Electro-modalities: ☐ Muscle stimulation: ☐ Surgery: ☐ Injectibles: ☐
Joint mobilization: ☐ Massage: ☐ Deep frictions: ☐ Stretching: ☐
Exercise therapy: ☐ Strapping: ☐ Splinting: ☐ Crutch training: ☐
Dry Needling: ☐ Injectibles: ☐ Oral
medication(Anti-inflammatories/NSAIDS): ☐

11. What advice did you receive?

Injury One:

Rest/No sport activity: ☐ Limited sport activity: ☐ Full sport activity: ☐

Injury Two:

Rest/No sport activity: ☐ Limited sport activity: ☐ Full sport activity: ☐

Injury Three:

Rest/No sport activity: ☐ Limited sport activity: ☐ Full sport activity: ☐

12. How long have you been unavailable for training or competitive matches because of injury?

Training sessions

1-3 days 4-7 days Greater than 7 days

First injury: ☐ ☐ ☐
Second injury: ☐ ☐ ☐
Third injury: ☐ ☐ ☐

Competitive matches

1-3 days 4-7 days Greater than 7 days

First injury: ☐ ☐ ☐
Second injury: ☐ ☐ ☐
Third injury: ☐ ☐ ☐

13. Did you get facilities to access health care services on site?

Always (100%): ☐ Very often(75%): ☐ Often(50%): ☐
Sometimes(25%): ☐ Never(0%): ☐

14. Which health care services can you access after the game?

GP: ☐ Physiotherapy: ☐ Self treatment: ☐ Chiropractic: ☐
None: ☐ Sports massage: ☐ Biokineticist: ☐ Fieldside: ☐

Other: _____

PART C. PROTECTIVE EQUIPMENT

Training session

1. **Do you wear shin guards?**

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

2. **a) Do you wear ankle protection? (Braces, Strapping, etc.)**

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

b) If Yes, specify the reason: _____

3. **a) What footwear do you wear when playing?** _____

b) Do you think it is appropriate? _____

Competitive matches

1. **Do you wear shin guards?**

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

2. **a) Do you wear ankle protection? (Braces, Strapping etc.)**

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

b) If Yes, specify the reason: _____

3. **a) What footwear do you wear when playing?** _____

b) Do you think it is appropriate? _____

IF ANY OF THE PARTICIPANTS WISH TO GET THE RESULTS OF THIS RESEARCH, PLEASE BRING THIS TO THE RESEARCHERS ATTENTION AND IT WILL BE MADE AVAILABLE TO YOU.

Appendix D
INFORMED CONSENT FORM
(TO BE COMPLETED BY THE PARTICIPANTS OF THE RESEARCH)

TITLE OF RESEARCH PROJECT: A profile of soccer injuries in selected league amateur indoor and outdoor soccer players in the greater Durban area.

NAME OF SUPERVISOR: Dr C. Korporaal (0312042611)

NAME OF RESEARCH STUDENT: Nigel Archary (0723742023/ 0315022742)

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 any of the stakeholders in this study. | Yes | No |
| 8. Do you agree to voluntary participate in the study? | Yes | No |

If you have answered NO to any of the above, please obtain the necessary information from the researcher and / or supervisor before signing. Thank You.

Please print in block letters:

Research Participant: _____ Signature: _____

Witness Name: _____ Signature: _____

Researcher's Name: _____ Signature: _____

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:

A profile of soccer injuries prevalent in amateur indoor and outdoor soccer players in the greater Durban and surrounding areas

Background to the study:

Soccer is regarded as the number one sport globally in terms of participation as well as support. Due to the physical nature of the sport and the high number of injuries, there is a need to establish a profile of soccer injuries. This is needed in order to determine appropriate preventative measures and treatment strategies. My research sets out to achieve this by means of a quantitative questionnaire.

Objective of the study:

The data obtained by means of this questionnaire will allow for the establishment of an injury profile of soccer players and provide valuable information to assist healthcare professionals.

The questionnaire will only take a few minutes to complete, as most of the questions require you to tick the appropriate answer. There are only a few short written responses that are required.

Your participation in this study is much appreciated and you are assured that your comments and contributions to the discussion will be kept confidential. The results of the discussion will only be used for research purposes.

If you have any further questions please feel free to contact either me or my supervisor.

Kind regards,
Nigel Archary

Appendix F

INFORMED CONSENT FORM

(TO BE COMPLETED BY THE PARTICIPANTS OF THE FOCUS GROUP)

TITLE OF RESEARCH PROJECT: A profile of soccer injuries prevalent in amateur indoor and outdoor soccer players in the greater Durban and surrounding areas.

NAME OF SUPERVISOR: Dr C. Korpmaal (0312042611)

NAME OF RESEARCH STUDENT: Nigel Archary (0723742023/ 0315022742)

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 any of the stakeholders in this study. | Yes | No |
| 8. Do you agree to voluntarily participate in the study? | Yes | No |
| 9. Who have you spoken to regarding this study | | |
-

If you have answered NO to any of the above, please obtain the necessary information from the researcher and / or supervisor before signing. Thank You.

Please print in block letters:

Research Participant: _____ Signature: _____

Witness Name: _____ Signature: _____

Researcher's Name: _____ Signature: _____

Supervisor's Name: _____ Signature: _____

Appendix G
CONFIDENTIALITY STATEMENT - FOCUS GROUP
DECLARATION

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.

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 name: _____ Signature: _____

Appendix H

POST FOCUS GROUP, PRE PILOT STUDY **QUESTIONNAIRE FOR SOCCER PLAYERS**

All questions are strictly confidential. Please be as truthful as possible and tick one box per question unless otherwise indicated.

IF YOU HAVE PLAYED PROFESSIONAL SOCCER IN THE PAST SEASON THEN DON'T CONTINUE

PART A. IDENTIFICATION

1. Age: _____
2. Race: Black ☐ White ☐ Coloured ☐ Indian ☐ Other _____
3. Division: Outdoor(Discovery corporate league) ☐ Indoor(Gale street) ☐

IF YOU ARE A PLAYER IN OUTDOOR AND INDOOR LEAGUES AT THE SAME TIME THEN DON'T CONTINUE

4. Team: _____
5. Number of years as a player in outdoor or indoor soccer: _____
6. Number of years as a player in this current league as described in question 3. _____
7. How many games/training sessions per week have you participated in the past season:
0-2 ☐ 2-4 ☐ If greater than 4, please specify how many: _____
8. Playing position: _____
9. Do you participate in any other sports? Yes ☐ No ☐
10. If Yes, please specify: _____

PART B. HISTORY OF INJURY

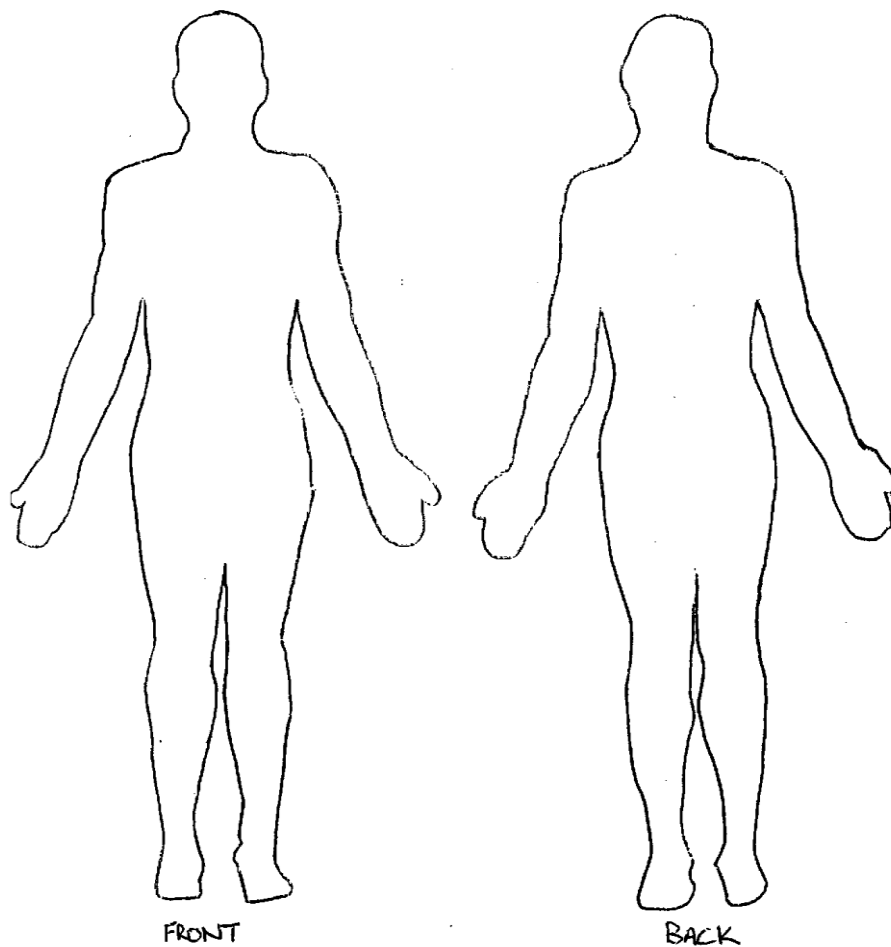
In the answers you give below, consider only the information over the last season.

1. Do you have any pre-existing medical condition? (Anemia's, Diabetes, Osteoporosis etc.)

2. Which of the following injuries did you sustain(One or more answers are possible):

- ☐ Soft tissue trauma/ Ankle injuries ☐ Knee/ Thigh injuries
☐ Head and facial injuries ☐ Lower leg injuries ☐ Foot injuries

3. Based on question two, which body parts sustained injury? (Indicate on the illustration)



4. How many injuries have you got/received/sustained during training or competitive session(s)?

Last season
Training sessions: _____
Competitive matches: _____

Season before last
Training sessions: _____
Competitive matches: _____

5. Has the injury resulted in you missing the following sessions? (More than one answer is possible)

Training sessions: ☐ Competitive matches: ☐

In the questions below, please base your answers on the three most severe injuries if the answer to the above question is greater than one.

6. Which were the injury mechanisms in the following periods?

Injury One:

Training Session

Tackle: ☐ Burns(Grass/Carpet): ☐ Running: ☐ Shooting: ☐
Jumping: ☐ Landing: ☐ Heading: ☐ Turning: ☐ Collision: ☐
Overuse: ☐ Other: _____

Competitive matches

Tackle: ☐ Burns(Grass/Carpet): ☐ Running: ☐ Shooting: ☐
☐ Jumping: ☐ Landing: ☐ Heading: ☐ Turning: ☐
Collision: ☐ Overuse: ☐ Other: _____

Injury Two:

Training Session

Tackle: ☐ Burns(Grass/Carpet): ☐ Running: ☐ Shooting: ☐
Jumping: ☐ Landing: ☐ Heading: ☐ Turning: ☐ Collision: ☐
Overuse: ☐ Other: _____

Competitive matches

Tackle: ☐ Burns(Grass/Carpet): ☐
Running: ☐ Shooting: ☐ Jumping: ☐ Landing: ☐ Heading: ☐
Turning: ☐ Collision: ☐ Overuse: ☐ Other: _____

Injury Three:

Training Session

Tackle: ☐ Burns(Grass/Carpet): ☐ Running: ☐ Shooting: ☐
Jumping: ☐ Landing: ☐ Heading: ☐ Turning: ☐ Collision: ☐
Overuse: ☐ Other: _____

Competitive matches

Tackle: ☐ Burns(Grass/Carpet): ☐ Running: ☐ Shooting: ☐
☐ Jumping: ☐ Landing: ☐ Heading: ☐ Turning: ☐
Collision: ☐ Overuse: ☐ Other: _____

7. How many training sessions and competitive matches did you miss last season as a result of the injury?

Injury One:

Training sessions:

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

Competitive matches:

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

Injury Two:

Training sessions:

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

Competitive matches:

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

Injury Three:

Training sessions:

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

Competitive matches:

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

8. What kind of treatment did you receive following injuries? (One or more answers are possible).

Injury One:

GP: ☐ Physiotherapy: ☐ Self treatment: ☐ Chiropractic: ☐
None: ☐ Sports massage: ☐ Biokineticist: ☐ Fieldside: ☐
Other: _____

Injury Two:

GP: ☐ Physiotherapy: ☐ Self treatment: ☐ Chiropractic: ☐
None: ☐ Sports massage: ☐ Biokineticist: ☐ Fieldside: ☐
Other: _____

Injury Three:

GP: ☐ Physiotherapy: ☐ Self treatment: ☐ Chiropractic: ☐
None: ☐ Sports massage: ☐ Biokineticist: ☐ Fieldside: ☐
Orthopedic surgeons: ☐ Other: _____

9. How long since the injury have you gone for treatment?

Injury One:

1-3 days ☐ 4-7 days ☐ Greater than 7 days ☐

Injury Two:

1-3 days ☐ 4-7 days ☐ Greater than 7 days ☐

Injury Three:

1-3 days ☐ 4-7 days ☐ Greater than 7 days ☐

**10. What kind of treatment or advice did you receive following injury?
(One or more answers are possible).****Injury One:**

Ice/cold: ☐ Compression: ☐ Elevation: ☐ Heat: ☐
Electro-modalities: ☐ Muscle stimulation: ☐ Surgery: ☐ Injectibles: ☐
Joint mobilization: ☐ Massage: ☐ Deep frictions: ☐ Stretching: ☐
Exercise therapy: ☐ Strapping: ☐ Splinting: ☐ Crutch training: ☐
Dry Needling: ☐ Injectibles: ☐ Oral
medication(Anti-inflammatories/NSAIDS): ☐

Injury Two:

Ice/cold: ☐ Compression: ☐ Elevation: ☐ Heat: ☐
Electro-modalities: ☐ Muscle stimulation: ☐ Surgery: ☐ Injectibles: ☐
Joint mobilization: ☐ Massage: ☐ Deep frictions: ☐ Stretching: ☐
Exercise therapy: ☐ Strapping: ☐ Splinting: ☐ Crutch training: ☐
Dry Needling: ☐ Injectibles: ☐ Oral
medication(Anti-inflammatories/NSAIDS): ☐

Injury Three:

Ice/cold: ☐ Compression: ☐ Elevation: ☐ Heat: ☐
Electro-modalities: ☐ Muscle stimulation: ☐ Surgery: ☐ Injectibles: ☐
Joint mobilization: ☐ Massage: ☐ Deep frictions: ☐ Stretching: ☐
Exercise therapy: ☐ Strapping: ☐ Splinting: ☐ Crutch training: ☐
Dry Needling: ☐ Injectibles: ☐ Oral
medication(Anti-inflammatories/NSAIDS): ☐

11. What advice did you receive?**Injury One:**

Rest/No sport activity: ☐ Limited sport activity: ☐ Full sport activity: ☐

Injury Two:

Rest/No sport activity: ☐ Limited sport activity: ☐ Full sport activity: ☐

Injury Three:

Rest/No sport activity: ☐ Limited sport activity: ☐ Full sport activity: ☐

12. How long have you been unavailable for training or competitive matches because of injury?

Training sessions

	1-3 days	4-7 days	Greater than 7 days
First injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Second injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Third injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Competitive matches

	1-3 days	4-7 days	Greater than 7 days
First injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Second injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Third injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. Did you get facilities to access health care services on site?

Always (100%): ☐ Very often(75%): ☐ Often(50%): ☐
Sometimes(25%): ☐ Never(0%): ☐

14. Which health care services can you access after the game?

GP: ☐ Physiotherapy: ☐ Self treatment: ☐ Chiropractic: ☐
None: ☐ Sports massage: ☐ Biokineticist: ☐ Fieldside: ☐
Other: _____

15. Do you know about chiropractic treatment?

Yes: ☐ No: ☐

15.1 If Yes, what limited your access?

Financial: ☐ Absence of service: ☐ Lack of knowledge: ☐
Other: _____

16. If you have been to a chiropractor, do you think chiropractic treatment was needed/helpful for your injuries?

Strongly agree(100%): ☐ Moderately agree(75%): ☐ Agree(50%): ☐
Disagree(25%): ☐ Strongly disagree(0%): ☐

PART C. PROTECTIVE EQUIPMENT

Training session

4. Do you wear shin guards?

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

5. a) Do you wear ankle protection? (Braces, Strapping, etc.)

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

b) If Yes, specify the reason: _____

6. a) What footwear do you wear when playing? _____

b) Do you think it is appropriate? _____

Competitive matches

17. Do you wear shin guards?

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

18. a) Do you wear ankle protection? (Braces, Strapping etc.)

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

b) If Yes, specify the reason: _____

19. a) What footwear do you wear when playing? _____

b) Do you think it is appropriate? _____

PART D. INJURY COUNTERMEASURES PROGRAMME

1. Do you have a warm-up period prior to:

Training

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

Matches

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

2. a) How long is your warm-up programme? _____

b) What does it consist of? (One or more answers are possible)

Calves: ☐ Thighs: ☐ Lower back: ☐ Arms: ☐ Head and Neck: ☐

3. a) Do you have a post match stretch at the completion of the following sessions?

Training

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

Matches

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

b) How long is this? _____

4. What alternative fitness activity outside the teams training schedule do you participate in? (One or more answers are possible)

Weight training: ☐ Running: ☐ Cycling: ☐ Swimming: ☐ Spinning: ☐
Other: _____

Times per week

0: ☐ 1: ☐ 2: ☐ 3: ☐ >3: ☐

PART E. NUTRITION

1. a) Have you received professional nutritional advice?

Yes ☐ No ☐

b) If Yes, from whom?

GP: ☐ Physiotherapy: ☐ Self treatment: ☐ Chiropractic: ☐
None: ☐ Sports massage: ☐ Biokineticist: ☐ Fieldside: ☐
Other: _____

2. Do you follow any special diet?

Vegetarian: ☐ Vegan: ☐ Other: _____

3. How many glasses is your water intake during the following sessions?

Training: _____

Matches: _____

4. Do you take any additional supplementation? (One or more answers are possible).

Sports/energy drinks: ☐

Protein supplements: ☐

Creatine: ☐

Multivitamins: ☐

Vitamin injections: ☐

Other: _____

IF ANY OF THE PARTICIPANTS WISH TO GET THE RESULTS OF THIS RESEARCH, PLEASE BRING THIS TO THE RESEARCHERS ATTENTION AND IT WILL BE MADE AVAILABLE TO YOU.

Appendix I
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. Due respect to be given to every suggestion and comment by any member of the focus group and be debated with reference to the outcomes of the research.
3. The information gathered from this focus group by the researcher will be made public in terms of a mini dissertation and journal publication. The researcher will ensure that any participants in the focus group and research remain anonymous and confidential.

Member represents	Member's Name	Signature	Contact Details

Appendix J

PRE FOCUS GROUP
QUESTIONNAIRE FOR SOCCER PLAYERS

All questions are strictly confidential. Please be as truthful as possible and tick one box per question unless otherwise indicated.

PART A. IDENTIFICATION

1. Name: _____
2. Age: _____
3. Race: _____
4. Division: Outdoor ☐ Indoor ☐
5. Team: _____
6. Number of years as a player in outdoor or indoor soccer: _____
7. Playing position: _____

PART B. HISTORY OF INJURY

In the answers you give below, consider only the information over the last season.

1. **a) How many injuries have you got/received/sustained during training or competitive session(s)?**

- b) Has these injuries resulted in you missing the following sessions?**

Training sessions: ☐

Competitive matches: ☐

2. Which body parts sustained injury? (Indicate on the illustration)

3. Which were the injury mechanisms in the following periods? (One or more mechanisms are possible depending on the number of injuries).

Training Session

Tackling: ☐ Tackled: ☐ Running: ☐ Shooting: ☐ Jumping: ☐
Landing: ☐ Heading: ☐ Turning: ☐ Collision: ☐ Overuse: ☐
Other: _____

Competitive matches

Tackling: ☐ Tackled: ☐ Running: ☐ Shooting: ☐ Jumping: ☐
Landing: ☐ Heading: ☐ Turning: ☐ Collision: ☐ Overuse: ☐
Other: _____

4. How many training sessions and competitive matches did you miss last season as a result of injury?

Training sessions:

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

Competitive matches:

0: ☐ 1: ☐ 2: ☐ 3: ☐ 4: ☐ 5: ☐ >5: ☐

5. What kind of treatment did you receive following injuries? (One or more answers are possible).

Medical: ☐ Physiotherapy: ☐ Self treatment: ☐ Chiropractic: ☐
None: ☐ Other: ☐

6. If Chiropractic, what kind of treatment or advice did you receive following injury? (One or more answers are possible).

a. Chiropractic treatment

Training session

Ice/cold: ☐ Compression: ☐ Elevation: ☐ Heat: ☐
Ultrasound: ☐ TENS: ☐ Interferential: ☐ Muscle stimulation: ☐
Joint mobilization: ☐ Massage: ☐ Deep frictions: ☐ Stretching: ☐
Exercise therapy: ☐ Strapping: ☐ Splinting: ☐ Crutch training: ☐

Competitive matches

Ice/cold: ☐ Compression: ☐ Elevation: ☐ Heat: ☐
Ultrasound: ☐ TENS: ☐ Interferential: ☐ Muscle stimulation: ☐
Joint mobilization: ☐ Massage: ☐ Deep frictions: ☐ Stretching: ☐
Exercise therapy: ☐ Strapping: ☐ Splinting: ☐ Crutch training: ☐

b. Advice

Rest/No sport activity: ☐ Limited sport activity: ☐ Full sport activity: ☐

7. How long have you been unavailable for training or competitive matches because of injury?

Training sessions

	2-3 days	4-7 days	1-4 weeks	>4 weeks
First injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Second injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Third injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fourth injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fifth injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Competitive matches

	2-3 days	4-7 days	1-4 weeks	>4 weeks
First injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Second injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Third injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fourth injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fifth injury:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Did you get facilities to access chiropractic services when required?

Always (100%): ☐ Very often(75%): ☐ Often(50%): ☐
Sometimes(25%): ☐ Never(0%): ☐

9. If no access to chiropractic services, what were the reasons?

Financial: ☐ Absence of service: ☐ Other: _____

10. Do you think chiropractic treatment was needed/helpful for your injuries?

Strongly agree(100%): ☐ Moderately agree(75%): ☐ Agree(50%): ☐
Disagree(25%): ☐ Strongly disagree(0%): ☐

PART C. PROTECTIVE EQUIPMENT

Training session

7. Do you wear shin guards?

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

8. Do you wear ankle protection?

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

9. Do you wear appropriate footwear/shoes?

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

Competitive matches

1. Do you wear shin guards?

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

2. Do you wear ankle protection?

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

3. Do you wear appropriate footwear/shoes?

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

PART D. INJURY COUNTERMEASURES PROGRAMME

5. Do you have a warm-up period prior to:

Training

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

Matches

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

6. How long is your warm-up programme?

Prior to training

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

Prior to matches

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

7. **Do you have a cool-down period at the completion of the following sessions?**

Training

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

Matches

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

8. **Do you stretch the major leg muscles(calf, hamstring, quadriceps) in the following situations?**

Warming-up prior to training

*Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐
Sometimes(25%): ☐
Never(0%): ☐*

Warming-up prior to matches

*Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐
Sometimes(25%): ☐
Never(0%): ☐*

Cool-down after training

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

Cool-down after matches

Always(100%): ☐ Very often(75%): ☐ Often(50%): ☐ Sometimes(25%): ☐
Never(0%): ☐

9. **Do you undertake flexibility training (not included as part of a warm-up or cool-down)?**

Times per week as part of a team session

0: ☐ 1: ☐ 2: ☐ 3: ☐ >3: ☐

Times per week as extra individual work

0: ☐ 1: ☐ 2: ☐ 3: ☐ >3: ☐

10. **Do you perform/undertake strength training in the gym?**

Times per week as part of a team session
0: ☐ 1: ☐ 2: ☐ 3: ☐ >3: ☐

Times per week as extra individual work
0: ☐ 1: ☐ 2: ☐ 3: ☐ >3: ☐

PART E. NUTRITIONAL ADVICE

1. What is the quantity of water intake during the following sessions?

Training

Excellent: ☐ Very good: ☐ Good: ☐ Fair: ☐ Poor: ☐

Match

Excellent: ☐ Very good: ☐ Good: ☐ Fair: ☐ Poor: ☐

2. Are you given any nutritional advice on what to eat or to drink?

A lot: ☐ A little: ☐ None: ☐

Appendix K
Focus group DVD recording

Appendix L
Appendices CD

**ETHICS CLEARANCE CERTIFICATE**

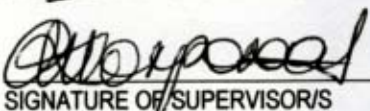
Student Name	N.W. Archary	Student No	20100699
Ethics Reference Number	FHSEC 020/07	Date of FRC Approval	23/07/2007
Research Title:	A profile of soccer injuries in the selected league amateur indoor and outdoor soccer players in the greater Durban area.		

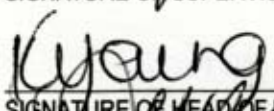
In terms of the ethical considerations for the conduct of research in the Faculty of Health Sciences, Durban University of Technology, this proposal meets with Institutional requirements and confirms the following ethical obligations:

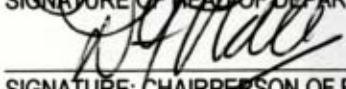
1. The researcher has read and understood the research ethics policy and procedures as endorsed by the Durban University of Technology, has sufficiently answered all questions pertaining to ethics in the DUT 186 and agrees to comply with them.
2. The researcher will report any serious adverse events 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


SIGNATURE OF SUPERVISOR/S


SIGNATURE OF HEAD OF DEPARTMENT


SIGNATURE: CHAIRPERSON OF RESEARCH ETHICS COMMITTEE
23/10/2007
DATE23/10/07
DATE23/10/07
DATE25/10/07
DATE