

MENTAL TOUGHNESS PROFILE AS ONE OF PSYCHOLOGICAL PREDICTORS OF INJURIES AMONG MALAYSIAN PROFESSIONAL FOOTBALL PLAYERS

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Abstrac

Injury is one of the common occurrence one can observe in most of the sports and games, which can occur either by accident or intentionally. There are many reasons for the factors occurrence of injuries and that psychological aspect can be considered as one of the factors. Therefore, the objective of the study is to determine whether mental toughness can be used as psychological predictors of athletic injuries in Malaysian football players involved in the 2001 Malaysian Professional Football League. A descriptive method of research was used to determine the psychological predictors of injury among the selected state team players. A pilot study was carried out to test the validity and reliability of the questionnaire. Cluster sampling was used to get the actual number of subjects. Based on this sampling method, all teams were clustered into five groups (North, South, East, West and East Malaysia). From these five groups, two teams from each cluster were randomly picked. All players in each team were recruited (25 players each team x 10 teams = 250 players). Questionnaires, observation, and interview were the instruments used in determining psychological predictors of injuries. Chi-square test was used to know the association between injured and non-injured players and injuries. Then, univariate and Multivariate Logistic Regression was also used to identify the psychological predictors of injuries by using the Statistical Package for Social Science (SPSS) version 11.0 for windows. This study indicated that majority of the Malaysian professional football players involved in Malaysia Football League have problems with mental toughness. Most of them have poor emotional stability with poor impulse control. Analysis also showed that these players had the highest incidence of injuries. In conclusion, the results indicated that mental toughness can be used as one of the psychological predictor of injuries in Malaysian Professional Football Players. It is recommended that these players attend awareness programme and also educate them with stress and mental toughness.

Keywords: *mental toughness, psychological predictor, athletic injury, professional football.*

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1.0 Introduction

Although sports science is well recognized for the past 40 years, sport psychology is still considered as a new field. Sports psychology concerns with both psychological factors that influence participation and performance in sport and exercise as well as psychological effects derived from them. Although relatively undeveloped, sports psychology is an established discipline. Sport psychologists involved in performance enhancement of athletes at the elite level. The study of human behaviour in sport was largely the realm of physical educators interested in the application of a psychological perspective to physical activity and sport. The desires of sports performers to achieve even greater heights than their predecessors and the various political and economic pressures for sport success in the international arena led to demands on athletes, coaches, and administrators alike for higher levels of performance (Morris & Thomas, 1990).

Williams (1993) states that coaches were interested in the psychological aspects of athletic competition even before there were a science called sport psychology. For example, in the 1920s Knute Rockne, the American football coach of the fighting Irish of Notre Dame, popularized the pep talk by making it an important part of his coaching. We should note, however, that Rockne did not attempt to psych up his team for every contest. He only used the pep talk for special occasions. Coaching interest in contemporary sport psychology also involves more than a mere concern for psyching up athletes for competition. Sport psychology also involves in motivating athletes so that each participant competes at his or her capacity. To do this, the athletes must use strategies to “psych out” opponents, reduce or cope with extraordinary levels of stress, prevent drug abuse, develop successful team strategies, and teach and learn skills. Clearly, sport psychology is a central component of sport competition.

Another aspect that sport psychologists are working on is to look at the relationship between psychological predictors and injury occurrence in sport activities. Psychological parameters such as personality traits, anxiety, self-esteem, and mental toughness are among the factors that can be considered to determine psychological predictors leading to athletic injury. Accordingly, identification of factors that predispose athletes to injury is essential in order to develop effective interventions before the actual occurrence of sport injury.

1.1 Research Background

No common operational definition of football injury exists. Various studies on the incidence of football injuries have different definition of “football injuries”. Awareness of the differences in these definition assists researchers in interpreting and comparing reported results. Differences in definition of football injury at least partly explain the differences in incidences found. In some studies, a football injury is defined as an injury sustained during training as well as competition for which an insurance claim is submitted (Mosterd, 1973; Sanderson, 1977).

Preventing all sport injuries is impossible, but reducing their frequency is a desirable goals. Increased involvement and participation in sport activities have influenced physical immobility, mental stress and other harmful aspects of ‘modern’ life. However, the negative side of this new trend has been a corresponding increase in sports injuries. This apparently inevitable side effect is undesirable, not only to the injured sports participants but also to the employers and the society as a whole. The cost of absenteeism and medical care of sports injuries is considerable.

Leddy *et al.* (1994) stated that since 1965 investigators have studied the relationship between psychological factors and athletic injury. The earliest studies were conducted in an effort to identify the personality variables and other factors, such as life stress, that predisposed athletic competitors to injury or were related to the occurrence of injury (Andersen & Williams, 1988; Coddington & Troxell, 1980). Prediction and prevention of injury, however, have proven elusive. Gould and Weinberg (2000) insisted that psychological factors influenced the incidence of injury, responses to injury, and injury recovery.

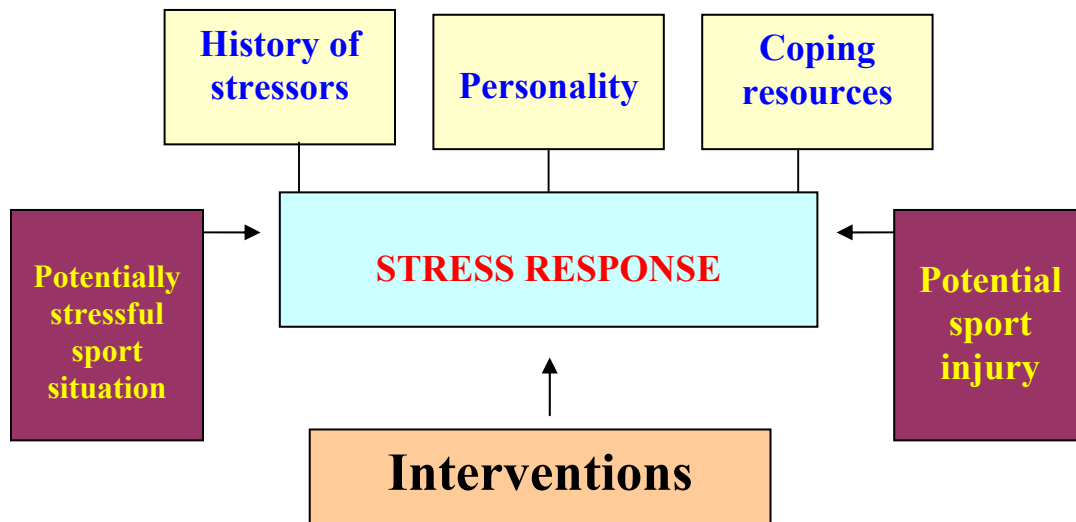
Football injury in general, impieties all types of damage occurring relation to soccer. Han Inklaar (1994) states that no common operational definition of soccer injury exist. In some studies (Mosterd, 1973; Groh, 1975; Biener, 1978; Roaas, 1979), a soccer injury is defined as an injury sustained during soccer for which an insurance claim is submitted. In other studies, the definition is confined to injuries treated by a general practitioners (Inklaar, 1986) or at a hospital casualty or traumatology department (Tenvergert *et al.*, 1992).

Like other activities in daily life, playing soccer has a certain risk of injury. Risk is basically expressed as incidence, which is defined as the number of new cases of a disease arising in a defined population during a given period of time (De loes, 1990). In this definition, a rate of disease is presented with a numerator (number of new cases) and a denominator (defined population at risk). A general conclusion is that the incidence of injury depends on the population being studied. High risk groups have been identified with respect to age, gender and level of competition.

Although most causal factors for athletic injury are physical or situational, some psychological factors also contribute to injury vulnerability and resiliency (Smith *et al.*, 1990). These also apply to football in which psychological predictors are thought to the occurrence of injury. Therefore, psychological factors of injury are also important to be addressed in detail. A number of variables have been examined as potential predictors of injury occurrence in sport. Early work in this area provided descriptive accounts of the types of athletes thought to be prone to injury and suggested that intra-personal conflict, anxiety, depression, guilt and low self-confidence were important contributors to injury occurrence (Sanderson, 1977).

Subsequent research has taken a variety of other factors into account, and the manner in which they interact has been summarized by Andersen and Williams (1988) in their stress-related model of injury occurrence process in sport. This model, a simplified form of which is shown in figure 1.1 (page 16), provides an excellent framework for examining the psychological precursors to injury.

Figure 1.1: A Stress-Related Model of Sports Injury
(based on Andersen & Williams, 1998)



In sports, regardless of the best efforts of coaches and trainers, injuries still occur. In fact, injury involves an element of risk or extreme demands in terms of strength, power or endurance. Injuries still occur even though everything possible is done to reduce the factors that might cause injury in sports. One of the possible prevention approaches to reduce injury in sports is to address the psychological predictors of injury.

Most injuries can be prevented. When prevention is not made an integral part of the program, an increase in injuries and true emergencies results. For instance, an athlete may have a pre-existing condition that he or she is not aware of. This can lead to injury. On the other hand, athletes may have not been properly or completely rehabilitated following injury before returning to action, and re-injure him- or herself. Most of the time, an athlete has not been taught the skills needed to participate, has not been properly conditioned during the pre-season, or has been allowed to neglect conditioning during the season. This individual, too, may injure him- or her-self as well as others.

Injury is also more than an event. It is a process played out over days or months – or even years. Attempts have been made to describe this process by a stage theory of emotion. Although this approach is of important conceptual value, the variability of emotional response and the difficulty in assessing emotional status with precision limit the practical usefulness of this approach. Basically, all parties; coach, physiotherapist, psychologist, and official as the main line of defense against injuries. When the coach's role, for example, in regard to injury is defined and they meet those responsibilities that are part of his or her role, the number and severity of such injuries can be reduced (Inklaar, 1994)

It is important to address the different psychological predictors, which leads to athletes' injury and to describe ways to proceed with the psychosocial components of the rehabilitation process. In most cases, the injured athletes will do return to their sport. It is

recognize however, that in some cases injuries will be so severe. In these cases, an athlete will not be able to return to his / her sport. The occurrence of injury, whether severe or minor, may force athletes to end their athletic careers. In the United State, national figures have estimated that between three and five million recreational and competitive athletes experience a sport-related injury (Kraus & Conroy, 1984).

Physical factors, however, are the primary cause of athletic injuries, but psychological factors can also contribute. Personality factors such as stress levels, and certain predisposing attitudes have all been identified (Rotella & Heyman, 1986; Wiese & Weiss, 1987) as psychological antecedents to athletic injuries. Thus, fitness professional need to understand psychological reactions to injuries and how mental strategies can facilitate recovery. Much of the study predictability is based on risk factor analysis (Meeuwisse, 1991). An appropriate expression of injury risk where the entire population exposed to injury is identified is vital as a starting point for further analysis. Essentially, a risk factor can be used to predict injury even if it is a confounding variable, since its value is in being a marker.

There have been abundant research to identify the existence of risk factors for injury. But, a survey of the literature demonstrates that there is little epidemiological evidence to date for predicting individual injury (Meeuwisse, 1991). Prediction is possible through single or multiple factor analysis, but one problem in finding significant results appears to be due to the wide individual variability in predisposing (risk) factors. With a few exceptions an individual who is about to participate in a sport cannot know with certainty that they will be hurt as they still do not have any experiences about the injury occurrence in their sport.

Based on the researches that have been completed in this particular area, there was no study has been carried out in the aspect of psychological predictors of injury occurrence in football among Malaysian football players who were involved in Malaysian professional Football League. Therefore, this study was to determine psychological predictors to injury occurrence among footballers in Malaysian Professional Football League as well as to determine psychological profiles of footballers in Malaysian Professional Football League. This study was also documented injury profiles of footballers in Malaysian Professional Football League.

1.2 Statement of Problem

Sport psychologists are tried to work on a few aspects of sport injuries. In fact, the psychological aspect of injury such as psychological predictors of injury occurrence is one of the most important aspects in sport psychology. Injuries in sport activities can occur for many reasons. No matter how safe the environment or how well conditioned the athlete, activity will sometime inevitably produce some injuries, whether it be by contact with other bodies, the floor or ground, or sporting equipment.

Accordingly, statement of problem in this study was psychological predictors of injury among Malaysian football players who were involved in Malaysian Professional Football League in the year 2001 season. The aim of this research was to find any psychological predictors that might lead to injury occurrence in sport, specifically in football tournament in Malaysian Professional Football League. Four psychological parameters were selected; to see personality traits, state-trait anxiety, self-esteem, and mental toughness among selected football players.

1.3 Research Objective

- 1.3.1 To determine psychological profiles of footballers in Malaysian Professional Football League.
- 1.3.2 To document injury profiles of footballers in Malaysian Professional Football League.
- 1.3.3 To identify psychological predictors to injury occurrence among footballers in Malaysian Professional Football League.

1.4 Significance of the Study

Through this study, it can help all parties who were involved whether directly or indirectly in football in determining psychological profiles of footballer, especially in Malaysian Professional Football League. This study was also enabling coaches for documenting injury profiles of their players and at the same time identifying psychological predictors of injury occurrence among their players. If the result of this study has shown that any psychological profiles chosen (personality, state-trait anxiety, self-esteem and mental toughness) can be considered as predictors of injury occurrence in football, then all the teams involved in Malaysian Professional Football League should take any possibility and do it something in overcoming these particular weaknesses.

If the players have problems with mental toughness, for example, they need to attend awareness programmes and also educate them with stress and mental toughness aspects as well. Otherwise, if coaches and team management can overcome and make sure their players have no problems with all these four psychological profiles, the injury occurrence in football may be decreased or can be avoided from sustain.

1.5 Research Questions

- 1.5.1 Can it determine psychological profiles of footballers in Malaysian Professional Football League?
- 1.5.2 Can it document injury profiles of footballers in Malaysian Professional Football League?
- 1.5.3 Can it identify psychological predictors to injury occurrence among footballers in Malaysian Professional Football League?
- 1.5.4 Can psychological predictors lead to a decrease on injury occurrence in sport, specifically in Malaysian Professional Football League?
- 1.5.5 Can it provide practitioners the knowledge and ability to reduce as many injuries as possible based on psychological predictors in football?

1.6 Research Hypothesis

- 1.6.1 Psychological predictors are among the most influential factors that might lead to injury in football.
- 1.6.2 Psychological predictors are not among the most influential factors that might lead to injury occurrence in football.

1.7 Research Instruments

Research instruments were including a set of questionnaires, an output from observation, and all information from interviews. A set of questionnaires is being used in order to know about the psychological factors, which may be predictors of injury. These

questionnaires were administered three times; pre-season, mid-season, and post-season. To establish the reliability of the questionnaires, 50 players were recruited from among the Kelantan TNB and Kelantan SKMK football teams

The questionnaires used in this study are as follows:

- a) The NEO Five –Factor Inventory (Personality Traits) by Paul T. Costa, Jr. and Robert R. McCrae (1992). be as strong in order to bother them.
- b) The State-Trait Anxiety Inventory (STAI) by Charles D. Spielberger and Rogelio Diaz-Guerrero (1976).
- c) Self-esteem Questionnaire (SEQ) by Christine Bennette (1999).
- d) Mental Toughness Questionnaire (MTQ) by Alan Goldberg (1999).

1.8 Sampling

The sample of this research were the players involved in Malaysian Professional Football League 2001. Players selected from 10 teams out of 24 teams involved in Premier One and Premier Two. The respondents were those players who are causing injury and those players who are being injured by opponents, not only during the training session but also during the competition. Researcher has also used coaches, physiotherapists, teams' officers, fan clubs, and family members of the players for obtaining in-depth information.

250 players out of 550 players involved in Premier One and Premier Two of the Malaysian Professional Football League were selected. Records show that the prevalence of injury in Malaysian Premier Football League is 2 players out of 11 players - 20% in every game (unpublished data from Football Association of Malaysia Research Division). Cluster sampling has been used to get the actual number of subjects. Based on this sampling method, all teams were clustered into five clusters (North, West, South, East and East Malaysia). From these five clusters, two teams from each cluster were randomly picked up as a subject (25 players x 10 teams = 250).

1.9 Procedures

Details of the present study was explained to the team management and players and the details on dates of activities, venues and contact phone number have also been provided to every respondent. Participation was voluntary and consent was given verbally by each individual. The researcher has provided guidelines on how to answer those five sections of questionnaire. The questionnaire was distributed three times (pre-season, mid-season. Apart from the questionnaire, all the information should be able to gain from the injured players through the interview method. In-person interview has been utilized so that individuals like players, coaches, team officers, and also players' family could discuss these aspects of their experience in handling the psychological factors that might lead to injury occurrence in soccer.

1.10 Basic Assumption and Limitation of the Study

This research has been focusing on professional football league's players of Malaysia with concentration to the 10 teams. The researcher observed some of the football matches and also interviewed the injured players in those matches. The researcher by

visiting the 10 teams involved personally and established the good rapport with the players. It is assumed that the players who took the questionnaire answered truthfully. It was assumed that the samples are represented the population of soccer players at elite level in Malaysia on all psychological predictors used in this research. It was assumed that all participants are motivated to participate in this study. It was assumed that all participants are fully aware of the study.

1.11 Data Entry and Analysis

Data was collected by using a set of questionnaires. All the collected data then, have entered into the computer through Statistical Package for Social Science (SPSS) version 11.0 for windows. In completing the data analysis, univariate analysis of variance with repeated measures was used to know the association between injured and not injured players and psychological predictors of injury. Chi-square (χ^2) test has been used in this study when the data are nominal (categorical) data. Otherwise, t-test is used in this study when the data are numerical. Apart from that, the percentage method has also been used in order to measure every item of questions together with the data that has shown by graph and/or tables. To complete this task, Univariate and Multivariate Logistic Regression was used. in order to compare the psychological predictors between injured and non-injured players.

1.12 Operational Definition

1.12.1 Athletic Training

Athletic training that will be put to use in this research is the training programmes that outfitted by those teams in preparing their teams for the 2001 Malaysian Professional Football League. It will also be including all the matches involving the ten teams in Premier One and Premier Two in Malaysian Premier Football League 2001.

1.12.2 Psychological Predictors

All the possibilities that can be predicted before the injury have occurred. There are a number of psychological factors, which can be predicted before the athletes suffered with injury such as stress, pressure, personality, aggression attitude, life stress events, too eager, and much more. In order to complete this method, only four parameters of psychological predictors / questionnaires have been used: Neo Five-Factor Inventory (NFFI), State-trait Anxiety Inventory (STAI), Self-esteem Questionnaire (SEQ), and Mental Toughness Questionnaire (MTQ). These questionnaires were used in determining psychological predictors of injury.

1.12.3 Athletic Injury

“Athletic injury” is a collective name for all types of injuries obtained in the course of sporting activity. Category of injury in this study was based on the definition of injury in football (soccer) given by Inklaar (1994):

- i) mild injury (cannot play from one to two weeks),
- ii) moderate injury (will not be able to play between three and five weeks),
- iii) and severe injury (cannot afford to play for more than five weeks)

1.12.4 Malaysian Football Players

A total of 250 Malaysian football players who have been selected as respondents in this study were the players represented ten teams in Premier I and/or Premier II with concentration to the 2001 season. Based on the cluster sampling that has been used in this study, only ten out of twenty four teams involved in Premier I and Premier II were chosen as subjects of this study. The respondents' ages are ranges from 17 to 38-year old and they are professional football players involved in Malaysian Professional Football League 2001.

1.12.5 Malaysian Professional Football League

Malaysian Professional Football League was started in 1995. Before 1995, this tournament was called Malaysian Semi-Pro Football Tournament, which has been begun and kicked-off in the year 1989. It all started in 1987 when His Royal Highness The President issued a royal command that the Semi-Pro Football Tournament should commence by 1989. After six years of implementation of the Semi-Pro League, then in 1995, Malaysian Professional Football League has been introduced in Malaysia.

1.13 Results

This study has shown that there is a statistically significant difference ($p < 0.05$) between mental toughness and injury. This study showed that most of the injured players scored low in mental toughness compared than non-injured players. This means mental toughness can be assumed as a predictor of injury among Malaysian Professional Football League. In other words, if the players scored low in mental toughness, their chances to be injured were higher compared than players who scored normal and/or high in mental toughness. A few mental toughness factors such as 'ability to handle pressure', 'level of confidence', and 'motivation' influencing the occurrence of injuries among football players.

1.14 Discussion

This study indicated that majority of the Malaysian professional football players involved in Malaysia Football League have problems with mental toughness. Most of them have poor emotional stability with poor impulse control. Analysis also showed that these players had the highest incidence of injuries. The results indicated that mental toughness can be used as one of the psychological predictor of injuries in Malaysian Professional Football Players. It is recommended that these players attend awareness programme and also educate them with stress and mental toughness.

The results of this study have shown the same phenomenon found by a number of researchers. Norris (1998) said that a variety of psychological variables such as mental toughness factor may predispose an athlete to injury. Stressful life events may ultimately lead to mental fatigue and exhaustion. This may present externally as apathy and lassitude, where an athlete is 'not interested' and lacks concentration. Remedial action could involve a period of attention training, to enable the athlete to focus on a task or shift attention between different tasks rapidly. Coaches therapists must recognize that an athlete is vulnerable to injury after a stressful life event. Training should be modified by reducing its intensity and concentrating on basic skills rather than introducing new ones.

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