The relationship between the competitive-trait anxiety and the rate of sports injuries in professional soccer players

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ABSTRACT: Soccer as well as many other sports requires high levels of psychological skills. However, previous studies only examined the association between psychological factors as a whole (general) deal with sports injuries and in particular to examine the relationship between the competitive-trait anxiety and the rate of sports injuries in soccer is not using a specific questionnaire. The purpose of this study is to investigate the relationship between these variables in professional soccer players. Thus, 50 male soccer players with an average age of 23/33 ± 3/60 years, height 179/91 ± 5/33 cm, weight 75/24 ± 8/35 kg, and a mean sports history 7/53 ± 2/62 years who were playing in the Premier League and Division Gilan province participated in the study. Research data were collected through the sport competition anxiety test (SCAT) and an injury report form. The Spearman’s correlation coefficient test showed a weak relationship between the competitive-trait anxiety and the rate of sports injuries in the professional soccer players (𝑟 = 0/436, 𝑝 = 0/03). Thus given the weak correlation observed in the present study, do not appear to be the competitive-trait anxiety as a predictor for the risk of sports injuries in professional soccer players. As a result, recommended that the general questionnaires to assess the psychological factors associated with sports injuries are not used, if possible.

Key words: Anxiety, Trait anxiety, Competitive anxiety, Sports injuries, Soccer players

INTRODUCTION

Since soccer is a contact sport, the rate of injury is high as 65-95 percent of players are injured at least once a year (Hågglund et al., 2007). Therefore detection of more factors contributing to sport injury are necessary to prevent and reduce them. The risk factors are involved in the injury included four general categories (Meeuwisse, 1994). These factors include non-modifiable extrinsic factors (experience and game situation), modifiable extrinsic factors (playground, rules and equipment), non-modifiable intrinsic factors (previous injury, age, gender, female hormones and anthropometry factors) and modifiable intrinsic factors (fitness and endurance, flexibility, strength, neuromuscular control, balance, and psychological and social factors). So, one of the internal risk factors contributing to the injury is psychological factors.

Based on the model of Junge (Junge et al., 2000), psychological factors are divided into three categories: stress, cope and emotional state. In their new models, Ivarsson and Johnson (2013) put psychological factors in three categories of personal factors, stress and cope. In accordance with the findings of Johnson and Ivarsson (2011), trait anxiety has a significant relationship with the risk of injury in soccer players. Rogers and Landers (2005) also stated that such a positive relationship between daily stress and an increased rate of injury in young soccer players. Also, the results of the case study by Williams and Andersen (1998) showed that athletes can reduce their level of injury by improving stress coping strategies. They presented the relationship between psychological factors and rate of injury in a model in the same year (Andersen and Williams, 1998) which has been the basis of several researches since then (Figure 1). Finally, in a prospective study that examining the predictive psychological factors of sports injuries in soccer players in Sweden (38 men, 18 women) Ivarsson et al. (2013)
reported that trait anxiety, negative life events stress and routine concerns of life are predictive factors for the risk of sports injuries.

![Stress and injury model diagram](image)

Figure 1. Revised version of the stress and injury model. Note: The original model did not have the bi-directional arrows between personality, history of stressors, and coping resources.

Therefore, based on the results of the literature review, it is observed that most previous studies have reported a relationship between psychological factors such as the competitive-trait anxiety with the rate of sports injuries (Clow and Hucklebridge, 2001; Ford et al., 2000; Galambos et al., 2005; Junge et al., 2000; Rogers and Landers, 2005). It is actually believed that competitive-trait anxiety leads to evaluating competitive situation more threatening than it really is, so performer responds to stimuli with higher state anxiety and more tension that can cause injury to the athletes (Ivarsson et al., 2013; Johnson and Ivarsson, 2011). However, the most of these studies deal with this problem that the questionnaires used in all of them examine and evaluate psychological factors generally and in non-specialized with some subscales and just based on few questions, and it is not clear whether competitive-trait anxiety, as an independent psychological factors, is significantly associated with rate of sports injuries or not. So, regarding that the questionnaires used in previous studies are general and examine all psychological aspects and also sport psychological research in Iran has not focused on examining anxiety by specific and single questionnaire in soccer, this question rise that “whether there is a significant relationship between the competitive-trait anxiety and the rate of sports injuries in professional soccer players?”

**METHODOLOGY**

This study is a retrospective descriptive and correlational kind. Statistical population included 259 soccer players who were playing in the Premier League and Division Gilan province which among them 50 male soccer players with an average age of 23/33 ± 3/60 years, height 179/91 ± 5/33 cm, weight 75/24 ± 8/35 kg, and a mean sports history 7/53 ± 2/62 participated in this study. It should be noticed that the anxiety questionnaire and injury report form were distributed among all individuals but only 50 persons filled them.

The sport competition anxiety test (SCAT) that is known “Martens’ questionnaire” was used to examine the competitive-trait anxiety (Gill and Williams, 2008). The questionnaire consists of 15 components on a Likert scale which is scored from 1 to 3 (Never, sometimes, and always). The reliability of the test has been reported as test-retest coefficient of ICC=0.81. Also, an injury report form was used to evaluate the rate of sport injury. The form was completed by interviewing athletes and looking over/checking their clinical files.

Statistical analysis was performed using SPSS for Windows, ver. 18. Since variables were interval, the Spearman's correlation coefficient test was used for examining data. A significant level was considered to be 95%, with alpha being ≤ 0.05.
FINDING AND RESULTS

Based on the collected data from the injury report form, clinical files and interview, 75 injuries were recorded in participants over a season and the thigh muscles strain injury was most common among other types of injury. Also, 29.3 percent of injuries were related to the upper extremities and 70/7 percent to lower extremities; 64 percent of injuries had occurred during competition and 36 percent during practice. Also, examining the competitive-trait anxiety by the questionnaire showed that 18 percent of participants had low anxiety (score 16-10), 28 percent moderate anxiety (score of 23-16) and 54 percent high anxiety (Score 30 -23). Also examining the number of injuries due to anxiety showed 14.6 injuries had occurred in people with low anxiety and 45.3 injuries in people with high anxiety. The results of the Spearman's correlation coefficient test are also presented in Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean ± SD</th>
<th>Correlation coefficient (r)</th>
<th>Sig. level (p)</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive-trait anxiety</td>
<td>21.64 ± 3.27</td>
<td>0.436</td>
<td>0.03</td>
<td>Weak correlation</td>
</tr>
<tr>
<td>Rate of sport injuries</td>
<td>1.75 ± 0.83</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

DISCUSSION

Data analysis showed a weak relationship between competitive-trait anxiety and the rate of sports injuries (03/0=p :436/0=r) in the professional soccer players. However, it should be considered that though injured soccer players experienced higher competitive-trait anxiety, significant level was about 0.05 and the correlation coefficient was low (r=0.436); so analysis of results must be interpreted with caution. Thus, although the results of the study was statistically consistent with the previous studies (Clow and Hucklebridge, 2001; Ford et al., 2000; Galambos et al., Junge et al., 2000; Johnson and Ivarsson, 2011) indicating the relationship between psychological factors and rate of sports injuries, but considering the amount of R-squared (r²=0.19) in the present study, the relationship was very weak. It must be noticed that the questionnaire used in this study examined only competitive-trait anxiety, independent of other psychological factors.

Consequently, based on the research findings, it appears that we cannot be considered the competitive-trait anxiety as a risk factor for sports injuries in professional soccer players with certainty. Therefore, it is suggested that these results along with the results of other psychological factors such as the competitive-state anxiety was interpreted. It doesn’t mean that a general inventory should be used to examine different psychological factors, rather we must use specific questionnaire for each mentioned factors and interpret their results together. Hence it seems that although, based on the results of most previous research, the stress and injury model is able to predict the risk of sports injuries, but a separate study by psychological factors such as the competitive-state anxiety has no such ability. In this regard, Smith and Milliner (1994) and Weiss (2003) also believed that the lack of correlation between psychological factors such as anxiety and concern with the risk of sports injuries and the reported that it seems there is not an exact relationship between the psychological factors and sports injuries. So, it seems one of the possible reasons for the lack of a strong relationship between the competitive-trait anxiety and sports injuries is high level skills of athletes participating in this study. In fact, the low levels of anxiety in the professional athletes to achieve superior skill performance (Andersen and Williams, 1999) can be a justification for the low correlation between the competitive-trait anxiety and the rate of sports injuries in the soccer players of this study. It is worth noting that in this study, 46 percent of players had low to moderate anxiety that this could be due to their high skill level.

So in conclusion it can be stated that due to a very weak correlation observed in the present study it does not appear to consider the competitive-trait anxiety as a predictor of the risk of sports injuries among professional soccer players. Thus researchers are recommended not to have a general outlook toward psychological factors in the form of general or non-specific questionnaires and to examine other psychological factors separately and specifically in the relation with sports injuries so that a more accurate understanding of each psychological factors’ role in the risk of sports injuries will be provided. Due to the different nature of each sport these results are not generalizable to other sports so it is also recommended to investigate the relationship between psychological factors and the rate of sport injury in other sports with specific questionnaires.

REFERENCES