International Journal of Physical Education, Sports and Health 2019; 6(5): 133-135

P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 5.38
IJPESH 2019; 6(5): 133-135

www.kheljournal.com
Received: 01-07-2019
Accepted: 03-08-2019

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Influence of psychological factors on injury prevalence in under 17 kabaddi players

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Abstract
Kabaddi has gained tremendous popularity in the world, although there are studies which have addressed physical and biomechanical risk factors but, there is hardly any evidence depicting the injury prevalence and its correlation with the psychological characteristics. The purpose of the study is to examine the influence of psychological variables on the injury risk among young kabaddi players. 88 kabaddi athletes (52 males, 36 females) of under 17 age completed Competitive State Anxiety Inventory (CSAI-2) and reported frequency of injury occurrence in past 12 months. The results of Spearman's correlation analysis showed more significant correlation between injury occurrence with cognitive state anxiety (p<0.01) and self-confidence (p<0.05) in female kabaddi players and in male kabaddi players there was significant correlation between injury occurrence and self-confidence (p<0.05). It can be concluded that psychological factors may relate with the injury occurrence in kabaddi players. So that can be addressed and dealt with to improve the overall performance.

Keywords: Kabaddi, anxiety, self-confidence, injury

Introduction
Kabaddi is a contact team sport and is played between two teams of seven players. It is one of the most popular sports in India played mainly among people in villages. All the types of Kabaddi are played with a lot of intensity, and since this is a body contact sport, the intensity and aggression run very high amongst the players. However, the popularity of this game has both positive and negative effects on the players. Kabaddi is a competitive performance oriented team game. Due to its simplicity, ease to play and public appeal in India, it is known as the "Game of masses" also [1]. Athletes are quite often exposed to injuries in kabaddi which may hamper the individual performance and eventually the team performance. It is vital to regularly screen the athletes regarding injuries and strategies should be made to prevent them. Risk factors which cause the injury should be identified and dealt accordingly. Anxiety is a negative emotion which many athletes come across in their career. Anxiety is further classified as cognitive and somatic anxiety. In cognitive anxiety, previous negative experiences may cause mental anxiety. Causative factors for cognitive anxiety are negative thoughts and image created by the person about his/ her self. Somatic anxiety, exhibits itself with the physical symptoms of the person. Behavioral and physiological dimensions are influenced in the somatic anxiety. Symptoms of somatic anxiety are shivering, stomach cramps and sweating of the palms [2, 3]. Self-confidence is a crucial component for an athlete to perform well in his/ her sport. Optimal self-confidence leads to desired results. There are many studies which give idea about the physical and biomechanical risk factors and their consequences, which may alter the athlete to play their normal game but there is hardly any evidence depicting the role of psychological variables on injury occurrence that too in kabaddi players [4]. The aim of the study is to find the correlation between psychological variables on injuries in male and female kabaddi players.

Materials and Methods
88 Athletes of under-17 kabaddi tournament participated in the study (36 females and 52 males) who were present at that day. The questionnaire was administered to the subjects during State-level kabaddi tournament held at Ahmedabad around half and hour before their

competition. Before distribution of questionnaire, the researcher approached the athletes through their coaches and managers at the personal level requesting them to extend their persistent cooperation in the data collection. Oral Consent was taken from the players. The questionnaires were circulated to the athletes and necessary instructions were given to all the subjects before filling the questionnaire. The athletes responded well and filled up the questionnaire as soon as the instructions were perceived by them. The competitive state anxiety inventory CSAI-2 was used to measure psychological variables. Three Psychological variables i.e. cognitive anxiety, somatic anxiety and self-confidence were assessed. Participants rated their anxiety responses for each psychological variable which has 9 representative items. Symptom intensity levels were rated on a scale ranging from 1 to 4 leading to scores ranging from 9 to 36 for both anxiety and self-confidence. Previous injury during the past 12 months was also interrogated. The definition of injury "any injury in the sporting activity that required treatment beyond icing and taping" was given and as per the given definition, athletes responded if they had been injured. If the athlete had been injured, he/she was asked to indicate how many times he/she had been injured and to describe their most recent and serious injury [5, 6, 7, 8, 9]. Table 1. describes the classification of injuries during the past 12 months. The Mean age of the athletes was 15.11±1.21 and had experience of playing kabaddi from 1-7 years.

Statistical analysis

Statistical analysis was done using SPSS version 16. Normality of the data was checked using Kolmogorov–Smirnov test. As the data was not normally distributed, Spearman's correlation coefficient was used to assess the strength of correlation between injury occurrences with psychological variables.

Results and Discussion

The results shows that in athletes which were injured during the past 12 months (27% of the sample) exhibited significant increase in cognitive anxiety and significant decrease in self-confidence and the result was more significant in females than in males. Results of Spearman's correlation showed a significant relationship between cognitive anxiety (ρ=0.443, p=.007) ** and self-confidence (ρ=-0.334, p=.047)* with injury occurrence in females. In males negative correlation was found between cognitive anxiety and injury occurrence but was not significant (ρ=-0.048, p=0.737) and significant negative correlation was found between self-confidence with injury occurrence (ρ=-0.282, p=0.043). Positive correlation was found between injury occurrence and somatic anxiety in both male and female players but was not significant. The finding of this study is consistent with the study done by Johnson and Ivarsson (2010) which concluded that the positive relationship is present between competitive trait anxiety and injury occurrence; and injured soccer players had a significantly higher level anxiety than non-injured athletes [10]. The finding of the present study is consistent with the study done on junior football players by Mohammad Hossein Alizadeh *et al.* (2012) for cognitive anxiety but not consistent with self-confidence because in the present study there is significant negative correlation between injury occurrence with self-confidence which is in contrast to that study [11]. Williams & Andersen, (1988; 2007) found that injuries may lead to increased anxiety which is consistent to the present study. These effects may lead to substantial negative stress responses, and accordingly increasing the risk of injury [12].

Table 1. Shows classification of injury during the past 12 months:

Table 1: Classification of injury during the past 12 months

Type of injury	Description
Mild	An injury requiring treatment without interruption of training/practicing or playing in games
Moderate	An injury more severe than a mild injury, that interferes with training/practicing or playing in games
Major	An injury more severe than mild or moderate that requires a long duration of downtime, often with surgery or hospitalization

Table 2 shows Demographic characteristics of under-17 Kabaddi Players (n = 88)

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Variable	Mean	Sd
Age (years)	15.11	1.21
Height (m)	1.58	0.08
Weight (kg)	46.11	7.05

Table 3 shows Correlation among the study variables in male athletes (n = 52)

Table 3: Correlation among the study variables in male athletes (n = 52)

Variables	P	P value
Injury – cognitive anxiety	-.048	0.73
Injury – somatic anxiety	0.257	0.06
Injury – self-confidence	-.282*	0.04

Table 4 shows Correlation among the study variables in female athletes (n = 36)

Table 4: Correlation among the study variables in female athletes (n = 36)

Variables	P	P value
Injury – cognitive anxiety	0.443**	0.007
Injury – somatic anxiety	0.324	0.054
Injury – self-confidence	-.334*	0.047

*- Correlation is significant at 0.05 (2-tailed)

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

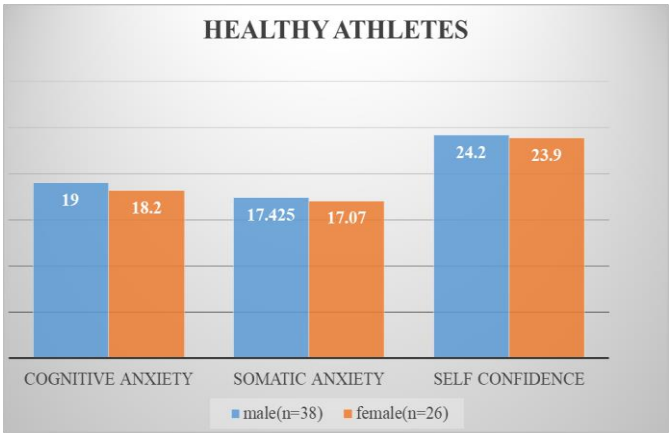

Fig 1: Shows Scores of the components of CSAI-2 in healthy male and female kabaddi players.

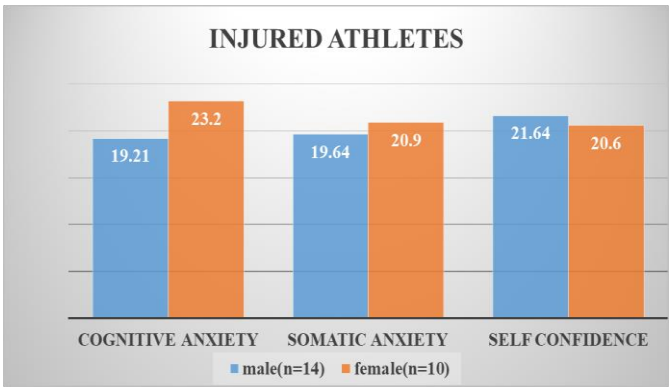

Fig 2: Shows Scores of the components of CSAI-2 in male and female kabaddi players who exhibited occurrence of injury in past 12 months.

Conclusion

From the present study it can be concluded that cognitive state anxiety and self-confidence may relate more with the injury occurrence in female kabaddi players and in male kabaddi players there was significant correlation between injury occurrence and self-confidence. So, it can be suggested that the psychological factors may influence injury occurrence in kabaddi players.

Implications

Hence, the psychological interventions may help athletes to improve their state of mind and can increase the self-confidence and reduce the anxiety. Such interventions may be used to prevent injury occurrence and improve the overall performance of the athletes on the field.

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