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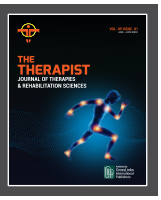

Original Article

Relationship of Resilience and Anxiety with Injury Prevention Programs in Pakistani Footballers

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ABSTRACT

Resilience is a one of the major psychological qualities that enhance an individual's strength and shield individuals from the adverse effects of diverse situations. **Objective:** To find out resilience and anxiety in footballers following or not following an injury prevention program. **Methods:** The study design used for this study was comparative cross-sectional survey, and data were collected from 35 football players. Players who were following or not following an injury prevention program were divided into two groups. Data for the resilience and anxiety was collected with help of strait trait anxiety questionnaire and Conner-Davidson resilience scale. **Results**: There was significant difference ($p \leq 0.05$) between the two groups for state anxiety in players not following any injury prevention program (44.15±4.71) and players following injury prevention program (39.00±3.77). Between groups comparison for trait anxiety also showed significant difference ($p \leq 0.05$) for players not following any injury prevention program (45.30±5.56) and following injury prevention program (40.20±4.21). Between groups comparison also showed that there was significant difference ($p<0.05$) in CDRS scores for players not following any injury prevention program (81.65±1.42) and players following injury prevention programs (92.20±1.97). **Conclusions**: The present study concluded that those players who had less anxiety levels had increased resilience levels while those players who were having increased anxiety had decreased resilience. There was a significant difference between anxiety and resilience levels and the players who were following injury prevention programs had less state and trait anxiety and better resilience.

INTRODUCTION

One of the most popular sports footballs is globally with a growing number of active players as well as viewers [1]. Football is by far the most globalized sport in the earth Football performance is grounded on factors such as to be fit physically, coordination, technique, endurance, tactics and agility. To be successful, players of football must also be able to leap, kick, tackle, and run [2]. Around 200,000 professional and 240 million amateur football athletes compete worldwide, with men accounting for roughly 80% of the total [3]. For many years, coaches, athletes, and scholars have been fascinated by the role of anxiety in sports. Anyone who has seen or participated in sports knows that emotional and motivational variables can cause one athlete to "peak" in the crucible of a race while another delays or "chokes" [4]. Anxiety is the body's natural response to threat. Generally, anxiety is unusual; nevertheless. Some life occurrences caution us that we are in a risky condition. Anxiety is a normal response in these settings since anxiety's function is to deploy the body's defenses [5]. Resilience is a person's ability to recover health after suffering a setback. Resilience is therefore defined as an individual's capacity to "bounce back" after

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experiencing stress. Athletes frequently suffer from injuries, mental health concerns, relationship stresses, and abuse, therefore how they adapt to it, or how resilient they are, is of paramount significance [6]. Athletes are frequently concerned about sports injuries. Many studies have been conducted to determine the predictors and risk factors for sports injuries. Currently, researchers are mostly interested in establishing the significance of certain psychosocial factors in calculating sensitivity or resistance to damage [7]. A study draw a conclusion that there is nearly a straight and noteworthy association among the amount of sports anxiety (physical, cognitive, and mental) and the overall number of the sports injuries that occur to players in contests, in addition to the previous year. Athletes with acute anxiety are more expected to be hurt, and the ratio of dissimilar injuries is greater [5]. players who had anxiety symptoms during the preseason were more exposed to get injuries in the upcoming year. Athletes' psychological health and injury prevention might be the subject of targeted programs. [8]. Injury is defined as any physical illness induced by a player that took more than two weeks or bring about in missing a following match or training session. The severity of injury was categorized into 3 groups grounded on the interval of complaints and time off from matches and exercise periods. A harm was ordered as slight if there was no nonappearance for up to 1 week or no complaints for more than 2 weeks; modest if there was nonappearance for further than one week but a smaller amount than 4 weeks; and severe if there was no lack for more than four weeks or severe injury, such as a breakage and disarticulation. Overuse harm was described as one induced by recurring micro trauma with no recognizable traumatic event [9]. Musculoskeletal injuries are one the foremost problem facing in football participant. In which approximately 20% to 37% injuries were reported in male professional level, while if we look at the amateur level is around 18% to 23%. The player are mostly facing delayed onset muscles soreness, muscular strain, compression injuries, sprain, fracture, meniscal and ligament tear are more frequent in both male and female football athletes [10]. The highest incidences of injuries of player in the professional league of the United States of America, while the bottommost incidence injuries were found in Dutch and Danish among low level players. By comparison the match injuries are 4-6 times greater than injuries occurs during training session. One or two studies also explored that during football events the level of injuries is higher in male than female players. Whereas if we see on the other side few types of injuries i.e., anterior cruciate ligament (ACL) injuries were seen more regular in men than woman athletes. This study also reported that age is also a key factor in injuries for example the 17-18 years old age group seems to have equal or even greater than injuries of the adult players [11]. The CD-RISC is a small, personal-reported quantity of resilience with decent psychographic qualities. The results of this study, by means of CD-RISC, illustrate that resilience is anticipated and affect by health status (i.e., people with mental illness have lower levels of resilience than the over-all residents); resilience is changeable and can increase with cure; and more enhancement in resilience matches to advanced altitudes of worldwide development. The CD-RISC has the possible to be valuable in both clinical treatment and research [12]. Higher resilience was linked to lower anxiety levels and decreased depression in Bhutanese individuals, with their personal competence and resilience playing a major role for most of the effects. The results of this study point to potential areas for psychological health intervention in order to improve player resilience [13]. The objective of the this study was to find out resilience and anxiety in footballers following or not following an injury prevention program, to determine the relationship between resilience and anxiety in footballers following or not following an injury prevention program and to compare resilience and anxiety in footballers following or not following an injury prevention program.

METHODS

The type of study design used for this study was comparative cross-sectional study. Non-probability convenience sampling technique was adopted for this study. The present study was carried out at Pakistan Sports Board (PSB), Islamabad. G-Power 3.1 was used to calculate the sample size with 80% power and 95% confidence interval on the basis of an A-priori calculation [14]. Inclusion Criteria for the participants were aged between16-35 years, both male and female players, Football players participating in games for the past one month, and for 3 days more than 3 days a week. Players with any musculoskeletal injury or disorder/deformity were excluded from the study. Participants that fulfilled both inclusion and exclusion criteria were recruited for the study. After giving their informed consent, athletes were screened as per inclusion criteria. After assessment and screening, by randomization, the individuals were categorized into two groups. Group A consisted of those who did not follow an injury prevention program. And in group B those participants were involved who followed an injury prevention program. The data for anxiety and resilience was collected using state-trait anxiety questionnaire and Conner-Davidson's Resilience Scale respectively. Data Collection Tools for the study were Connor-Davidson Resilience scale State-Trait Anxiety Inventory. One of the study tools was Connor-Davidson

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Resilience scale (CD-RISC), that is grounded on Connor and Davidson's sketch of players' resilience as a multi-component characteristic score that varies with respect to different contexts, different timelines, various ages, gender groups, and among various cultural background, as well as an individual's changed life conditions. The CD-RISC has 25 self-calculated questions that describe hardiness, action orientation, self-efficacy, assurance, flexibility, patience, and resilience in the face of adversity, and other elements that embody the perception of resilience [15]. The State-Trait Anxiety Inventory (STAI) is being formulated and established to offer trustworthy, comparatively short, self-report gauge for measuring the level of state and trait anxiety in investigation and clinical rehearsal. The STAI have two 20-element scales for calculating the amount of anxiety as an emotional state (S-Anxiety) and individual dissimilarities in anxiety proneness as a personality trait (T-Anxiety). In responding to the S-Anxiety points, subjects state the strength of their emotional state of anxiety "right now, at this moment" by scoring once selves on the following 4-point scale: (1) Not at all, (2) Somewhat, (3) Moderately so, (4) Very much so. Answers to the T-Anxiety items require subjects to point out how they usually feel by answering how regularly they have experienced anxiety-related feelings and perceptions on a 4-point scale: (1) Almost never, (2) Sometimes, (3) Often, and (4) Almost always (9). Data were entered and analyzed by using SPSS 22.0. all the quantitative variables were presented by Mean + SD and qualitative with Frequency and percentages. Both groups were compared for Mean comparison of players following and not following injury prevention programs by using independent sample t test and Pearson correlation coefficients were also applied to see the relationship of variables. P-value <0.05 was considered s significant. A graphical description of study is given in figure 1.

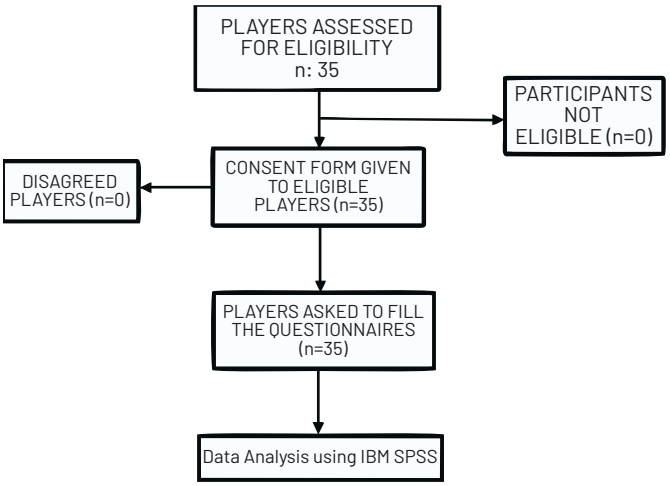

Figure 1: Study Flowchart Diagram

RESULTS

The main purpose of our study was to find and compare the resilience and anxiety in footballers following or not following an injury prevention program. There were a total number of 35 athletes who participated in the study, out of which 14.3% (n=5) were females and 85.7% (n=30) were males. The mean age of individuals was 24±4.37 with minimum of 18 years and maximum of 32 years old. There was significant difference (p=0.001) between both groups state anxiety with players not following any injury prevention program (44.15±4.71) and players following injury prevention program (39.00±3.77). Between groups comparison for trait anxiety also showed significant difference (p=0.006), for players not following any injury prevention program (45.30±5.56) and players following injury prevention programs (40.20±4.21). Between groups comparison showed that there was significant improvement (p=0.001) in CDRS with players not following any injury prevention program (81.65± 1.42) and players following injury prevention programs (92.20±1.97). This has been presented in (Table 1).

Variables	Not following any injury prevention program	Following injury prevention programs	p-value
	Mean ± SD	Mean ± SD	
State	44.15±4.71	39.00±3.77	0.001
Trait	45.30±5.56	40.20±4.21	0.006
CDRS	81.65±1.42	92.20±1.97	0.001

Table 1: Mean comparison of players following and not following injury prevention programs

Pearson correlation showed negative correlation between state anxiety and resilience in football players. There was a moderate negative correlation with value of *r*=-0. 480.The result showed negative correlation between trait anxiety and resilience in football players. This indicates the strong negative correlation which was -0.379. This proves that those football players who had less anxiety levels were having greater resilience level and those having high resilience were having decreased anxiety level. Correlation of Conner Davidson resilience scale with both state and trait was analyzed, results of which showed that both state (r=-0.480) and trait (r=-0.379) have strong negative correlation with Conner Davidson resilience scale. (Table 2, 3).

	CD-Resilience Scale	State Anxiety
CD-Resilience Scale	-	
State Anxiety	-0.480**	-

Table 2: Pearson correlation of CDRS and State Anxiety
**Correlation is significant (p=0.004) at the 0.01 level (2-tailed)

	CD-Resilience Scale	State Anxiety
CD-Resilience Scale	-	
Trait Anxiety-0.379**	-0.379**	-

Table 3: Pearson correlation of CDRS and Trait Anxiety
**Correlation is significant (p=0.025) at the 0.01 level (2-tailed)

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DISCUSSION

Football is a game which has always had a big audience and so comes along the possibility of stress, depression, and anxiety among the professional players as a question of what if they don't rise up to the expectation of the crowd. Since, it's being treated like a profession, there is always the chance of being demoted or removed or replaced due to any reason including injury. There have been extensive number of studies on stress preseason, during season, as well as the resilience of players. Resilience is the quality of players to perform under stress and being able to carry on with other activities like normal. The data set varies hugely between men and women belonging to professional sports like football and those that are retired from professional sports along with those who never played any sport [16]. For the analysis different types of tests and questionnaires have been used like Connor Davidson's, t-test [9]. conducted a study on the German female footballers belonging to first division second division. They analyzed the depression and anxiety in 17 teams using Center of Epidemiologic Studies Depression Scale (CES-D) and the Generalized Anxiety Disorder (GAD-7) scale. They concluded that the prevalence of depression and generalized anxiety symptoms in elite football players is affected by personal and sport-specific variables. It is very important to spread awareness of the mental health issues an athlete, a team coach might be facing and to encourage the treatment of those problems. Most essentially to destigmatize the mental health problems like stress and anxiety as well as any physical injuries as the saying goes "prevention is better than cure" [9]. An important factor is the high stress amongst athletes about any injuries during the game [17]. The tests conducted on a normally distributed sample for the analysis of groups that followed injury prevention program and those that did not follow injury prevention program. The results were a hopeful indication of injury prevention program. Keeping in mind all of this we also conducted a few tests and comparisons using the Connor Davidson resilience scale and State trait anxiety inventory. We can observe from the estimates in the results of the parameters of the study that may leading to the injuries in footballers. The difference of the indicators relating to both psychological variables (Resilience and Anxiety) are significantly different in both groups ($p< 0.001$). Providing health care to professional players whether mentally for their depression and anxiety or physically for their knees or any therapeutic conditions is essential to ensure a healthy life of a football professional. It is crucial to make it a normal aspect of life of a professional footballer to take care of their mental and physical health. Poudel *et al.*, conducted a study which showed the group of proportion of participants having above threshold anxiety i.e., 34.2%, resilience was found to be inversely associated with all values of anxiety. Participants who had the highest and better resilience scores had a comparatively significant decreased risk of developing anxiety. This was in favor of our results as higher resilience scores were found to be correlated with reduced anxiety [13]. In a study conducted by Zurita-Ortega *et al.*, results showed that resilience was directly correlated with the values obtained from the anxiety questionnaire. This suggests that those football players experience a state of anxiety and concern as a direct result of sustaining an injury due to not following an injury prevention program. This is supported by few other previous research studies. It was observed that the capacity of resilience and anxiety in sport were positively related showing higher correlations in non-injured athletes. It is possible that the capacity for resilience of non-injured athletes is higher because they had followed an injury prevention program. It has not been diminished by the frustration experienced by injured athletes generated when they are not able to compete [18]. According to a study exercise-based prevention programs are useful in the reduction of musculoskeletal injuries among football players which can ultimately reduce the level of anxiety and frustration due to which a player can bounce back confidently to the field [19]. This study results also showed that football players who were following the injury prevention program had low injury related anxiety. The previous study's results demonstrated that following an injury prevention program which is usually performed as a warm-up routine can significantly reduce vertical ground-reaction forces on the player as compared with a standard warm-up routine; however, a maintenance program is often required in order to retain the effects of these programs [20]. As many previous literatures concluded that an exercise program does not significantly affect the performance of players or physical activity does not improve. But there was a huge difference in their mental ability to cope with hard situations leading to anxiety. Also, it was noted that bouncing back to play was good in those players who were following an injury prevention program. A study was conducted in which an exercise program was designed to prevent physical injury but there was no difference seen between the groups who were following exercise program and those who were not following the exercise program [21].

CONCLUSIONS

The present study concluded that those players who had less anxiety levels had increased resilience levels while those players who were having increased anxiety had decreased resilience. There was a significant difference between anxiety and resilience levels and the players who were following injury prevention programs had less state

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and trait anxiety and better resilience.

Authors Contribution

Conceptualization: EK
Methodology: NS, AF
Formal analysis: EK, AF
Writing-review and editing: EK, NS, AF, ND, RM, SI, MK

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest

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