

The Relationship between Psychological Skills and Sport Anxiety among University Student Athletes in the Republic of Yemen

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Abstract: *The purpose of this study was to study the relationship between psychological skills and sport anxiety among university student athletes in the Republic of Yemen. To achieve this, 397 male and female student athletes by the age between 18- > 27 have been selected. In this study, demographic information, based on 64-items test of performance strategies (TOPS) and 21-items sport anxiety scale (SAS) were adopted to test psychological skills and sport anxiety, respectively. The method of this study was descriptive-correlation, which was carried out by collecting data by TOPS and SAS questionnaires. The statistical analyses were conducted using descriptive statistics, Pearson's correlation coefficient. The level of significance was set at 0.05 in order to check the significance of the calculated correlation. The results showed that psychological skills were negatively correlated with sport anxiety ($r = -.444^{**}$, $\rho < 0.01$). Likewise, psychological skills were negatively correlated with worry ($r = -.344$, $\rho < 0.01$), concentration disruption ($r = -.371^{**}$, $\rho < 0.01$), and somatic anxiety ($r = 0.429^{**}$, $\rho = < 0.01$).*

Keywords: *Psychological Skills, Sport Anxiety, Student Athletes*

I. Introduction

Nowadays, sport psychology is not tied to the science of sports alone, but sport psychologists are also engaged in different types of activities such as consulting with athletes and coaches, conducting research, and teaching. All sport psychologists are not trained the same way [1]. Sport psychologists are trained based on the activities that they are involved in. Clinical sport psychologists are trained to treat athletes and coaches suffering from serious emotional disorders, while educational sport psychologists are trained in exercise, sport science and related areas, and serve by teaching athletes and coaches about psychological strategies and their development [2]. However, the use of psychological skills has received less attention [3]. Psychological skills have long been acknowledged as being critical and important for the performance of athletes and their success in any sport. Sport psychologists learn skills that help and encourage athletes to improve their teaching procedures and build strategies for high performance, to handle competitive processes, fine-tune the requisite level of awareness to reach optimal performance, and to maintain their concentration amidst a lot of distractions in a competitive environment [4]. Mahoney and Chapman defined psychological skills or mental training as: "A set of techniques and strategies used to optimize athletic performance; they are largely non-physical in nature" [5]. There are several psychological skills strategies have been investigated and identified to enhance an athlete's performance such as stress control, energy management, attention control, and the maintenance of self-confidence and motivation. The methods that are used to explain these skills are known in the area of psychological skills as goal setting, relaxation, goal orientation, negative thinking, emotional control, team building and competition preparation, activation, imagery, self-talk, automaticity and attention control [6-9].

One of the main challenges in the field of sport psychology is anxiety, which has a significant influence on the performance of athletes. Positive thinking and psychological skills are needed to cope with problems that may arise due to sport anxiety. If it is not handled well or is misinterpreted, the athletes lose control and their performance may drop [10, 11]. Sport anxiety affects an athlete's performance [12, 13]. As Aufenanger stated, researchers in the field of sport psychology are interested in broadening and extending their knowledge about sport anxiety and its consequences on the performance of athletes [14].

In fact, for those who experience severe anxiety, their athletic performance will decrease. The relationship between the performance of student athletes and sport anxiety is so strong that a whole field of sport psychology has been devoted helping student athletes to reduce sport anxiety. Student athletes use various types of coping strategies in order to control and manage anxiety before it gets out of hand [15]. These rigorous challenges require student athletes to not only employ automated technical and tactical skills, but also to devise and use cognitive behavioral coping skills strategies to achieve a successful and satisfactory performance [16]. Fletcher and Hanton studied the frequency of the use of psychological strategies in relation to the explanation of competitive anxiety [9]. Nevertheless, additional research is needed to explore the psychological skills of athletes or their capability to use psychological skills to facilitate an explanation about anxiety. It is important to

distinguish between the degree of psychological skills and how frequently psychological skill strategies are used [16]. However, several researchers have linked their studies to a few mental skills that are deemed important for a positive explanation of sport anxiety [14]. The conceptual framework for this study was based on the cusp catastrophe model Fazy & Hardy and Bandura's self-efficacy theory, which focuses on the study of cognitive and somatic skills, and explains how they are related to one another. This theory corresponds with the aim of the current study to explore the relationship between psychological skills (mental) and sport anxiety (physical) [11, 17]. Sport anxiety was defined by Mammen and Weinberg & Gould as a negative emotional state characterized by apprehension, worry, and nervousness, and is associated with somatic arousal or activation. Competitive anxiety is a construct where the symptoms of anxiety are detached into cognitive and somatic components [18, 19]. Khodayaria et al. compared the relationship between mental strategies and sport anxiety among sprint and endurance runners. The participants comprised 72 endurance runners and 72 sprint runners. The output showed that there was a significant relationship between mental strategies and somatic state anxiety, and cognitive state anxiety and sport self-confidence ($P < 0.05$). Also, based on the findings of the research, there were no significant differences between the sprint and endurance runners with regard to somatic and cognitive state anxiety ($P > 0.05$) [20]. Azimkhani et al. investigated whether the mental skills and competitive anxiety of active young and adult skiers had any influence on their sport performance. The findings reported that there was a significant negative relationship between mental skills and competitive anxiety, while there was no significant relationship between mental skills and confidence. In addition the multiple regression analysis revealed that only cognitive anxiety and self-confidence could predict the mental skills of the skiers. Also, no significant differences were found between the groups based on their level of education [21]. The current study examined the relationship between psychological skills and sport anxiety among student athletes in four main universities in the Republic of Yemen. While some studies were previously conducted to examine the relationship between psychological skills and sport anxiety, there are few descriptive studies on this topic in the context of the Republic of Yemen. In addition, those studies that were conducted were not comprehensive enough to explain the use of skills to optimize the performance of athletes and to reduce anxiety. This study will provide a comprehensive understanding of the potential factors which account for the management of anxiety before, after and during exercise and sports competitions at the local or global level, and to develop and employ possible and timely strategies for intervention.

II. Research Method

The method of this study is quantitative correlation, which was carried out by collection data from the questionnaires. The participants in this study consisted of both males and females. The total number of student athletes were 1080, of which 397 were randomly selected based on Morgan's Table and were comprised of 278 male and 119 female student athletes. Both the male and female respondents were aged 18 years old and above, and were members of sports teams in football, basketball, volleyball, and handball of Yemeni universities located in the north and south of the Republic of Yemen. The questionnaires used in this study is Test of Performance Strategies (TOPS), it was developed by [22]. It is divided into 8 dimensions for practice and 8 for competition. There were 4 items within each of the 16 subscales, giving a total of 64 items. The eight practice dimensions were: imagery, emotional control, positive self-talk, attention control, automaticity, activation, goal setting and relaxation. The competition dimensions used the same practice subscales except for attentional control, which was replaced by negative thinking. The second questionnaire was used Sport Anxiety Scale (SAS) which was developed by [23]. The SAS contained a 21-item, multi-dimensional scale for measuring trait anxiety in competition, namely, cognitive anxiety (worry and concentration disruption) and somatic anxiety in sport situations. The worry factor consisted of 7 items and the concentration disruption factor consisted of 5 items. The somatic aspect consisted of 9 items, while the Sport Anxiety Scale had a total of 21 items.

III. Findings

The findings of the study were explaining the relationship between psychological skills and sport anxiety. The mean value, standard deviation and Cronbach's alpha of the participants' perceptions of psychological skills (TOPS; practice competition subscales) were already tabulated in Table 1. The results of the total mean values, standard deviations and Cronbach's alpha were found to be as follows: activation ($M=3.782$, $SD=0.584$, $\alpha=0.69$), automaticity ($M=3.800$, $SD=0.596$, $\alpha=0.65$), emotional control ($M=3.814$, $SD=0.531$, $\alpha=0.64$), goal setting ($M=3.817$, $SD=0.630$, $\alpha=0.67$), imagery ($M=3.686$, $SD=0.653$, $\alpha=0.69$), attention control ($M=3.514$, $SD=0.625$, $\alpha=0.63$), relaxation ($M=3.212$, $SD=0.659$, $\alpha=0.63$), self-talk ($M=3.396$, $SD=0.713$, $\alpha=0.66$), and total practice ($M=3.627$, $SD=0.428$, $\alpha=0.89$). For competition subscales the mean values, standard deviations and Cronbach's alpha were found in terms of activation ($M=3.742$, $SD=0.528$, $\alpha=0.63$), automaticity ($M=3.558$, $SD=0.578$, $\alpha=0.67$), emotional control ($M=3.711$, $SD=0.636$, $\alpha=0.65$), goal setting ($M=3.544$, $SD=0.618$, $\alpha=0.70$), imagery ($M=3.537$, $SD=0.583$, $\alpha=0.70$), and negative thinking ($M=3.848$, $SD=0.750$, $\alpha=0.63$), very high mean scores by the respondents were obtained for relaxation ($M=4.191$, $SD=0.762$,

$\alpha=0.71$), self-talk ($M=4.042$, $SD=0.757$, $\alpha=0.64$), total competition ($M=3.772$, $SD=0.406$, $\alpha=0.86$), and total TOPS ($M=3.699$, $SD=0.363$, $\alpha=0.92$). As shown in the Table, the mean, standard deviation and Cronbach's alpha for TOPS; practice and competition subscales values were reported.

Table 1. Description of Mean, Standard Deviation Data Relevant of TOPS; Practice and Competition Subscales

PRC	No of Items	M	S.D	α	COM	N of Items	Mean	S.D	α
ACT	4	3.782	0.584	0.69	ACT	4	3.742	0.528	0.63
AUT	4	3.800	0.596	0.65	AUT	4	3.558	0.578	0.67
EC	4	3.814	0.531	0.64	EC	4	3.711	0.636	0.65
GS	4	3.817	0.630	0.67	GS	4	3.544	0.618	0.70
IMG	4	3.686	0.653	0.69	IMG	4	3.537	0.583	0.70
ATC	4	3.514	0.625	0.63	NT	4	3.848	0.750	0.63
RLX	4	3.212	0.659	0.63	RLX	4	4.191	0.762	0.71
ST	4	3.396	0.713	0.66	ST	4	4.042	0.757	0.64
Total. PRC	32	3.627	0.428	0.89	Total.COM	32	3.772	0.406	0.86
Total. TOPS	64	3.699	0.363	0.92					

Notes: ACT activation, AUT automaticity, EC emotional control, GS goal setting, IMG imagery, ATC/NT attention control/negative thinking, RLX relaxation, self-talk, and COM competition.

The mean value, standard deviation and Cronbach's alpha of the participants' perceptions of SAS; for worry, concentration disruption, somatic, and total sport anxiety was shown in Table 2. In this study, the results showed that the total lowest mean values, standard deviation and Cronbach's alpha were obtained for worry ($M=2.24$, $SD=.611$, $\alpha=0.71$), concentration disruption ($M=1.99$, $SD=0.845$, $\alpha=0.82$), somatic anxiety ($M=2.13$, $SD=0.656$, $\alpha=0.78$), and total sport anxiety SAS ($M=2.13$, $SD=0.572$, $\alpha=0.88$). Based on the scale of the levels, it appeared that the student athletes had low levels of sport anxiety. As shown in the Table 2, the mean, standard deviation and Cronbach's alpha for sport anxiety subscales and total SAS were reported.

Table 2. Description of Mean, Standard Deviation Data Relevant of SAS; Cognitive and Somatic Subscales

Variables		N. Items	Mean	S.D	α
Cognitive	Worry	7	2.24	0.611	0.71
	Con. Dis.	5	1.99	0.845	0.82
Somatic		9	2.13	0.656	0.78
SAS		21	2.13	0.572	0.88
N		397			

Notes Con. Dis. concentration disruption, SAS

The relationship between variables can be determined by the value of Pearson's correlation (r). This can range from -1.00 to 1.00. This value will indicate the strength of the relationship between two variables. A correlation of 0 indicates no relationship at all, while a correlation of 1.0 indicates a perfect positive correlation, and a value of -1.0 indicates a perfect negative correlation. Cohen (1988) suggested the values of Pearson's correlation (r) as shown in Table 3 [24].

Table 3. Value of Pearson Correlation

$r = .50$ to 1.0 or $r = -.50$ to -1.0	Large
$r = .30$ to $.49$ or $r = -.30$ to $-.49$	Medium
$r = .10$ to $.29$ or $r = -.10$ to $-.29$	Small

The results in Table 4 showed that there was a significant negatively moderate correlation between total psychological skills (TOPS) and worry ($r = -.344^{**}$, $\rho < .01$), concentration disruption ($r = -.371^{**}$, $\rho < .01$), somatic anxiety ($r = -.429^{**}$, $\rho < .01$), and total sport anxiety ($r = -.444^{**}$, $\rho < .01$).

Table 4. Relationship between Psychological Skills and SAS; Total Sport Anxiety and Subscales)

Independent	Dependent variables		Pearson Correlation (r)	ρ .
TOPS	Cognitive	Worry	-0.344**	0.000
		Con. Dis	-0.371**	0.000
	Somatic		-0.429**	0.000
	Total SAS		-0.444**	0.000
N.	397			

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

The result showed that an increase in psychological skills will lead to a decrease in the level of the sport anxiety subscales among student athletes. The results specified that there was a significant relationship between psychological skills and sport anxiety among university student athletes in the Republic of Yemen.

IV. Discussion

The purpose of the current study was to examine the relationship between psychological skills and sport anxiety. The results indicated that there was a significant negatively moderate relationship between psychological skills and worry, concentration disruption, somatic anxiety and total sport anxiety. Therefore, the results of the analysis showed that there was no relationship between the use of psychological skills and total sport anxiety, worry, concentration disruption and somatic anxiety. In other words, a relationship existed between psychological skills and sport anxiety among student athletes in Yemen universities. This finding of the study was consistent with the finding of Burton and Martens et al. that a negative relationship was reported between cognitive anxiety and performance [25, 26]. Worry, which was a form of cognitive anxiety, was found to have a negative relationship with performance; Hays concluded that psychological skills were very useful in managing and regulating moods [27]. However, the results of some intervention experimental studies have shown that there was a relationship between psychological skills and sport anxiety. They confirmed that psychological skills could be decreased by sport anxiety, and would enhance the self-confidence of athletes and their ability to prepare themselves mentally and physically, and would lead to an improvement in their performance of motor skills [28-33]. Madsen & Roness studied the relationship between goal orientation and the use of psychological skills. The results showed that there was no significant relationship between athletes' "goal orientation profiles and their use of all four psychological skills in competition" [7]. Sabha et al. concluded that there was a direct correlation between the positive anxiety of athletes and a decisive game in volleyball. In addition, there was an inverse correlation between negative anxiety and a decisive game of volleyball [34].

The findings of a study by Khodayaria et al. showed that there was a significant relationship between mental skills and somatic state anxiety, cognitive state anxiety and self-confidence [20]. Also, the study by Azimkhani et al. showed that there was a significant negative relationship between mental skills and competitive anxiety components, while no significant negative relationship was found between mental skills and self-confidence [21]. The results of a study by Maker et al. revealed that there was a significant relationship between anxiety and the mental skills of successful teams, whereas a negative correlation was found in the unsuccessful teams [35]. The results of a study by Sangari et al. showed that there was a significant relationship between mental skills and competitive anxiety in female national football players of Iran [36]. In addition, Parnabas indicated that elite or national swimmers exhibited lower levels of competitive state anxiety. The results also showed the existence of a negative correlation between competitive state anxiety and sport performance among swimmers [37].

V. Conclusion

The aim of the current study was to examine the relationship between psychological skills and sport anxiety among university student athletes based on demographic variables. Therefore, the present study used all the 16 dimensions of psychological skills (TOPS) during practice and competition, and the 3 dimensions of sport anxiety (SAS) as its theoretical and conceptual framework to study the relationship between cognitive and somatic anxiety, as suggested by Bandura and Fazole & Hardy. The results showed that there were significant negatively moderate relations between total psychological skills and worry, concentration disruption, somatic anxiety, and total sport anxiety. The findings of this study shed light on the nature of the relationship between psychological skills and sport anxiety. It is expected that the results of this study could offer a promising view of student athletes with regard to the application of psychological skills for controlling sport anxiety.

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References

- [1]. P. Susic, *Sport Psychologists and the History of Sport Psychology*, (2013).
- [2]. J.L. Salzwedel, *The Relationship between Mental Training and Motivation in Collegiate Athletics*. University of Wisconsin-Platteville 2009.
- [3]. S.E. Short, Tenute A., and Feltz D.L., *Imagery use in sport: Mediation effects for efficacy*. *Journal of sports sciences*. 23, 2005, 951-960.
- [4]. R.B. Khandare and Pawar V., *A Study of Sports Psychology and the Competitive Mind Edge International Educational E-Journal*. II, 2013.
- [5]. M. Mahoney and Chapman B., *Psychological skills training in sport*. *Encyclopedia of Applied Psychology*. 3, 2004, 155-170.
- [6]. S.N. Said, *Relationship between Psychological Skills and Dimensions of Sporting Excellence Handball Players*. *Journal of Physical Education Sciences*. 2, 2011, 220-248.
- [7]. E. Madsen and Roness S., *goal orientation profiles among young soccer players" in relation to their use of psychological skills* Halmstad University 2010.
- [8]. M. Alatrash, *The Impact a Suggested Plan of Psychological Skills on Developing Performance of Football Players*. *An-Najah University Journal for Research*. 22, 2008, 1625-1652.

- [9]. D. Fletcher and Hanton S., The relationship between psychological skills usage and competitive anxiety responses. *Psychology of Sport and Exercise*. 2, 2001, 89-101.
- [10]. J.G. Cremades and Wiggins M.S., Direction and intensity of trait anxiety as predictors of burnout among collegiate athletes. *Athletic Insight: The Online Journal of Sport Psychology*. 10, 2008.
- [11]. J. Fazez and Hardy L., The Inverted-U Hypothesis: A Catastrophe for Sport Psychology? (British Association of Sports Sciences 1988).
- [12]. J. Butt, Weinberg R., and Horn T., The intensity and directional interpretation of anxiety: Fluctuations throughout competition and relationship to performance. *Sport Psychologist*. 17, 2003, 35-54.
- [13]. G.J. Jerome and Williams J.M., Intensity and interpretation of competitive state anxiety: Relationship to performance and repressive coping. *Journal of Applied Sport Psychology*. 12, 2000, 236-250.
- [14]. S.J. Aufenanger, Relationships between mental skills and competitive anxiety interpretation in open skill and close skill athletes. Miami University, 2005.
- [15]. J. Dachen, Test performance strategies among college going athletes: Differences across type of sport and gender. *International Journal of Behavioral Social and Movement Sciences*. 1, 2012, 4.
- [16]. D. Gould, Eklund R.C., and Jackson S.A., Coping strategies used by US Olympic wrestlers. *Research quarterly for Exercise and Sport*. 64, 1993, 83-93.
- [17]. A. Bandura, Self-efficacy: toward a unifying theory of behavioral change. *Psychological review*. 84, 1977, 191.
- [18]. G. Mammen, A Study to Examine the Relationships Between Athlete Anxiety and Perceived Coaching Behaviours Among Varsity Basketball Players. (ProQuest 2008).
- [19]. R.S. Weinberg and Gould D., *Foundations of Sport and Exercise Psychology*, 6E. (Human Kinetics 2014).
- [20]. K. Behroz, Abdulamir S., and Yaghob D., Comparison relation between mental skills with sport anxiety in sprint and endurance runners. *Procedia-Social and Behavioral Sciences*. 30, 2011, 2280-2284.
- [21]. A. Azimkhani, Gürsoy R., and Torbati H.R.T., Analyzing the relationship between mental skills and competition anxiety among young and adult skiers. *International Journal of Sport Studies*. 5, 2015, 860-867.
- [22]. P.R. Thomas, Murphy S.M., and Hardy L., Test of performance strategies: Development and preliminary validation of a comprehensive measure of athletes' psychological skills. *Journal of sports sciences*. 17, 1999, 697-711.
- [23]. R.E. Smith, Smoll F.L., and Schutz R.W., Measurement and correlates of sport-specific cognitive and somatic trait anxiety: The Sport Anxiety Scale. *Anxiety research*. 2, 1990, 263-280.
- [24]. J. Cohen, *Statistical power analysis for the behavior science*. Lawrence Erlbaum Association. 1988.
- [25]. D. Burton, Do anxious swimmers swim slower? Reexamining the elusive anxiety-performance relationship. *Journal of Sport and Exercise Psychology*. 10, 1988, 45-61.
- [26]. R. Martens, Vealey R.S., and Burton D., *Competitive anxiety in sport*. (Human kinetics 1990).
- [27]. K.F. Hays, Putting sport psychology into (your) practice. *Professional Psychology: Research and Practice*. 26, 1995, 33.
- [28]. M.M.A.M.J. Goldsmith and Hassan M.M.M., Mental skills and relation with psychological Balthml among soccer players applicants. *Journal of Physical Education Sciences*. 4, 2013.
- [29]. A. Al-Doulat, et al., The Effect of Anxiety of Badminton Players and its Relationship to the Level of Accomplishment An-Najah University Journal for Research - Humanities. 26, 2012, 1060-1078.
- [30]. I. Abdelhaq, The Effect of Proposed Mental Training Program on skills performance in Gymnastics of Physical Education Majors. *Journal Of The Islamic University Of Gaza. (Series Of Humanities Studies)*. 19, 519-538.
- [31]. A.F.A. Abd-Elaziz, Impact of Psychological Rehabilitation Program on Self-Confidence Level and Competition Anxiety for Soccer Players of Anterior Cruciate Ligament Injury. *World Journal of Sport Sciences*. 3, 2010, 138-143.
- [32]. G. Al-Khasawneh, Estimate the Levels of Anxiety of Female Students in Physical Education College at Yarmouk University in Gymnastics Courses. *An-Najah University Journal for Research - Humanities*. 21, 2007, 1097-1112.
- [33]. E.K. Al-Aobydy, Relationship between the Psychological Skills and Attribution of Advanced Fencing Players in Baghdad. *Modern Sport journal* 7, 152-168.
- [34]. H. Sabha, Jasem W., and Behnam B.K., Some Anxiety Types and its Relationship With the Decisive Game Results in Iraqi Women's Volleyball League Conference Eighteenth periodic to the faculties and departments of Physical Education. 2009, 284-294.
- [35]. G. Maker, Singh A.K., and Pramanik T., Relationship of Mental Skills and Anxiety between Successful and Unsuccessful team of men Cricket at Delhi Intercollegiate level. *International Journal of Scientific and Research Publications*. 2, 2012, 1-5.
- [36]. M. Sangari, Fotrousi F., and Masrou F.F., Relationship Between Mental Skill and Competitive Anxiety in Female National Football Players. *World Applied Sciences Journal*. 20, 2012, 1175-1178.
- [37]. V. Parnabas, The Relationship between Competitive State Anxiety and Sport Performance among Swimmers. *The International Journal of Indian Psychology* 1, 2015.