
The Perception of Athlete's Anxiety Experience in Team and Individual Sports

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ABSTRACT

This study aims to investigate athletes' anxiety experience in team and individual sports during training and competitions. A total of 219 youth athletes (Individual, n = 112, Team, n = 107), (Male, n = 110, Female, n = 109) in various types of sports who represented in 'Sukan Malaysia' (SUKMA) competition had completed the questionnaires in assessing athletes' anxiety experience. CSAI-2 scale (score range 1 - 4) were used in the study consists of three components, which are somatic anxiety ($\alpha = .74$), cognitive anxiety ($\alpha = .77$), and self-confidence ($\alpha = .86$). Results revealed that there is a significant correlation (weak to a strong, negative and positive correlation) between all the variables of anxiety (somatic, cognitive and self-confidence). The t-test showed no significant difference among all the variables of anxiety between the team and individual sports. In addition, the result indicated there is no significant difference among the variables of anxiety between genders except for confidence. In conclusion, anxiety in athletes is an uncomfortable psychological condition in response to a perceived stress or the success of a task under pressure.

Keywords: Anxiety experience, Confidence, Gender, Team and Individual Sports.

INTRODUCTION

The term anxiety in sport refers to the elevated stress or anxiety that occurs in situations when the demands of training or competition exceed an athlete's perceived ability (Rowland & Van Lankveld, 2019). Moreover, anxiety between athletes occurs because of fear of results (Kumar, 2017). This is primarily due to anxiety's perceived negative results on performance due to the negative perception (Soltani, Hojati & Reza, 2016). Anxiety can be good or bad to the athlete. However, it depends on how the athletes dealt with it. Excessive anxiety can lead athletes to have poor performance and drop out. Nevertheless, peak performance requires a certain amount of anxiety (Rathod, 2020). Anxiety is a common emotional state experienced by athletes at all levels of performance, "an unpleasant psychological state in reaction to perceived stress regarding the performance of a task under pressure" (Cheng, Hardy & Markland, 2009). A recent study revealed that the terms "competitive state anxiety," "competitive trait anxiety," "somatic anxiety," "cognitive anxiety," "behavioral anxiety," "performance anxiety," "facilitative anxiety," "debilitative anxiety," and "pre and post-competition anxiety" were also used to describe sports anxiety (Patel, Omar & Terry, 2010). Anxiety can disrupt athletes under pressure in a certain situation. The optimum threshold level difference is from athlete to athlete and from situation to situation (Rathod, 2020).

Anxiety is made up of three components which are somatic anxiety, cognitive anxiety and self-confidence. Halilaj, Gallopeni and Gllareva (2016) stated that the inclusion of cognitive anxiety are thoughts, beliefs, interpretation (worries, neurosis), while somatic or expression anxiety is caused by physical symptoms and the effects are: cardiovascular system (tachycardia, hypertension, etc.), respiratory system (need for air, feeling that breathing will stop), and skin changes (red signs in the skin, changes in body temperature, etc.). Somatic anxiety is also a physiological element related to autonomic arousals and negative symptoms such as nervousness, high blood pressure, dry throat, muscle tension, rapid heart rate, sweaty palms, and stomach butterflies (Martens, Vealey & Burton, 1990). Self-confidence in sport is tied to someone's ability thinking that he is going to win the competition or be successful in sporting competitions. Anxiety can affect athletes in many ways such as in cognitive state or physiology state. Performance under "pressure" is psychologically disruptive through impaired attention, distraction, or explicit-conscious monitoring of movement skills performance (Otten & Barrett, 2013). For example, in baseball different performance are shown in low-pressure games (regular season) and high-pressure games (post-season playoffs). A 109-year analysis of pitching and hitting statistics reveal a significant drop in performance during high-stakes playoffs (Otten & Barrett, 2013).

Esposito et al., (2020), recap a situation during a match, where the player suddenly fell into error or commit naivety that would never have occurred before. These were called "blackouts" scenarios. These can be translated as the concept of mental toughness. Aryanto and Larasati (2020), stated that athletes with high mental toughness were able to manage the potential of negative emotions that can weaken them when there were pressure. Athletes would also have more adaptive interpretations of subjective experiences that lead to negative emotions, such as anxiety competition, which has an impact on the achievement of an athlete's goals. Whilst, anxiety also could affect athletes in somatic ways. In the emotional globe, the major factors that affected athletes were the demanding cognitive performances including stress and anxiety (Lukasik et al., 2019). The environment of competition and training can also be a factor that can affect athletes' anxiety levels. According to Rowland and van Lankveld (2019), in sports, players were often under examination not only by teammates but also by fans and the effects can be personal (embarrassment, loss of confidence, etc.) and professional (loss of contracts, income, etc.) for decreasing in sports performance.

The dimensions of the anxiety level of athletes tend to be influenced by numerous variables, such as type of sports (team and individual sports). The level of anxiety may be different in team or individual sports. It is due to games and sports which are differ substantially in skills structure, load, strategies and tactics (Rathod, 2020). For this current study, individual sports and team sports are differentiated by the fact that in individual sports, athletes compete individually, while in team sports, athletes compete cooperatively in a group. Team sports can be defined as the involvement of a community and a network of players while individual sports focus more directly on the unique success story of one player (Pluhar et al., 2019). A study by Grossbard et al., (2009) has shown that athletes' type of sport, nature of sport (individual sport or team sport) and gender affect their performance.

Team sports encourage teamwork, regardless of the player's abilities, they must work together and depend on one another to succeed while individual sports success and failure are entirely on their own. Athletes who participated in individual sports were more nervous than athletes involved in team sports because in individual sports the overall pressure was on the player himself while the pressure move from one to the other in team sports (Rathod, 2020). However, the worrying subscale showed a contradictory result, in which team sports had significantly higher values than individual sports (Correia & Rosado, 2019). This means team sports also get higher anxiety levels as well as in individual sports but in different contexts. Team members, along with spectators, parents, and coaches, constantly judge and evaluate each other's performance and contribute to the team's success and failure. Therefore additional pressure is likely to prompt anxiety, especially worry (Correia & Rosado, 2019). Moreover, the effectiveness of coaches is supposed to increase the level of confidence among athletes to perform in sports (Mohd Kassim et al., 2020). To support, coaching effectiveness view as the extent to which coaches can implement their knowledge and skills to positively affect the learning and performance of their athletes (Mohd Kassim, 2021). Thus, this study is aimed to examine the difference in anxiety experience levels (somatic, cognitive and self-confidence) between the team and individual sports in competitions.

In sports competitions, the categories are divided into genders, which are female and male. The environment and characters of females and males are different in sports, and usually affect the performance and behavior of the athletes. Gender stereotyping is a process in which the biological sex of children determines the activities they engage in as well as the way they are treated in these activities. Sport is generally considered to be a masculine domain, and this stereotype results in the perception that the male has greater ability and importance to the sport than the females. This contributes to the differences between the genders in sports. Some researchers suggested that gender acts as a moderator between the background and consequences of anxiety (Ramis et al., 2015). It can be proved by Martens, Vealey and Burton (1990) stated that various factors, such as gender or kind of sports, tend to influence the dimensions of competitive anxiety. The effects of sports anxiety can be assessed differently by athletes, depending entirely on their gender (Correia & Rosado, 2019).

According to Kristjansdottir, Erlingsdóttir and Saavedra (2018), higher levels of competitive trait anxiety were reported by female athletes and the worries were also higher. Females tend to have lack of psychological or emotional states and attributes (confidence, concentration, emotional control and automation), cognitive and behavioral strategies (self-talk, imagery and goal setting) and personal arrangements (optimism). While males indicated a greater disruption in concentration (Grossbard et al., 2009). Paserman (2007), analyzed the data from the nine Grand Slam tennis tournaments and found that both males and females performed worse than the previous sets in the decisive set of the match. A study by Jetter and Walker (2015), revealed that there were no statistically significant gender differences in performance in which they analyzed over 100,000 tennis matches. The result of the study from the previous researcher about anxiety levels between females and males involved contradict results and there was not much research about anxiety levels among gender. Thus, this study also aims to investigate the differences among genders.

METHODOLOGY

Participants

The population of this study was selected among youth athletes who were participated in their preparation training and competition for 'Sukan Malaysia' (SUKMA). The statistical population utilized in this study included both team sports (Eg; volleyball, rugby, football, dragon boat, sepak takraw, kayak, cricket and canoe) and individual sports (Eg; lawn bowls, judo, karate, swimming, cycling, athletics, weightlifting, wushu, petanque, taekwondo, badminton, gymnastic, squash, archery, golf, shooting, bowling, silat, and sailing). The total number of populations was 410 youth athletes and 216 to 220 athletes were selected (Krejcie & Morgan, 1970). However, for this study (N=219) youth athletes had completed answering the questionnaires assessing athletes' anxiety experience ($n_{\text{Individual sports}} = 112$, $n_{\text{Team sports}} = 107$), ($n_{\text{male}} = 110$, $n_{\text{female}} = 109$). Most of the participants in this study were involved in sports for 1-5 years (59.4%) and were coached by male coaches (72.1%).

Measure

The 27-items from Competitive State Anxiety Inventory-2 (CSAI-2) developed by Martens, Burton, Vealey, Smith and Bump (1990) are presented in Table 2. CSAI-2 is divided into 3 subscales, which are cognitive state anxiety ($\alpha = 0.77$), somatic state anxiety ($\alpha = 0.74$) and self-confidence ($\alpha = 0.86$), (see table 2). The value of Cronbach's alpha coefficients showed the value of internal consistency between .70 to .90 which is an acceptable and good level of reliability. The four-presented answers included not at all (1), sometimes (2), often (3) and very often (4). The final scores range from 9 to 36 for each subscale, with 9 indicating low anxiety or confidence and 36 indicating high anxiety or confidence. According to Hossein, Zahra and Seyed (2016), prior research verified the validity of this questionnaire, and Cronbach's Alpha (= 0.89) was used to assess its reliability. The questionnaire was written in a dual-language format, and the athlete affirmed on the consent form that he or she understood and can read English.

Table 2. Competitive State Anxiety Inventory-2 (CSAI-2): sample item for each subscale

Item	Range of scale	Sample questions
Cognitive Anxiety (9 items)	1 – 4	Example: “I have self-doubts”
Somatic Anxiety (9 items)	1 – 4	Example: “My body feels tense”
Self-Confidence (9 items)	1 – 4	Example: “I feel self-confident”
N = 27		

Procedure: Coaches were informed and given details of the research procedure after the study was approved by the ethics committee of the authors’ institution. A suitable time and date for data collection following a training session were set with coaches who agreed to let their athletes participate in this research. Qualified athletes (in the categories of inclusions) were given a set of questionnaire which consists of two sections (a) a letter explaining the study and an athlete detail sheet; (b) a questionnaire to fill out before data collection. The athletes were allowed to ask any question before answering the questionnaire, the athletes were informed that their participation was voluntary, and they could withdraw at any time. The details collected would be kept confidential. The duration to complete the questionnaire took approximately 10 to 15 minutes.

Data analysis

For this current study, the data are analyse using the Statistical Package for Social Science (SPSS) version 26. Descriptive statistics, alpha coefficients and bivariate correlations among variables (anxiety experience, gender and sports categories) are presented in Table 3. Independent sample T-test was also used to measure the differences between categories of sport for anxiety experience level between the team and individual sports in Table 4 and differences between of gender for the component of anxiety level between male and female athletes in Table 5.

RESULT

The first aim of the current study was to measure the correlation between anxiety levels among team and individual sports and anxiety experience level among athletes. Results revealed that somatic and cognitive are associated. However, self-confidence showed that negative associated with somatic and cognitive anxiety experience. On average, athletes believe that their performance can be disrupted by the components of anxiety with gender. For all sub-scales of each measure, alpha coefficients suggested well to excellent levels of internal reliability.

Table 3. Descriptive statistics, alpha coefficients, and bivariate correlations among variables (anxiety experience, gender and sports categories)

Variables	M	SD	1	2	3	4	5
1. Cognitive anxiety	2.33	0.49	0.77				
2. Somatic anxiety	1.86	0.45	.64**	0.74			
3. Self-confidence	2.62	0.56	-.30**	-.42**	0.86		
4. Gender	1.49	0.50	.07	-.02	-.26**	-	
5. Sport categories	1.48	0.50	-.12	-.10	-.01	-	-

Note. N = 219. Alpha coefficients are presented on diagonal. **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level.

Second, the difference of anxiety experience level (somatic, cognitive and self-confidence) between team and individual sports in competition was investigated. An Independent Sample t-Test was conducted to analyses the different anxiety experience among team and individual sports. Comparison also made on the first factor of anxiety assessment score between team and individual sports. Result showed that (see. Table 4) all the components of anxiety do not significantly different in team and individual sports “Cognitive anxiety”, $t = 1.77, p = .08$ (Individual: $M = 2.38, SD = .55$; Team: $M = 2.27, SD = .42$), “Somatic anxiety”, $t = 1.51, p = .13$ (Individual: $M = 1.90, SD = .52$; Team: $M = 1.81, SD = .37$), “Self-confidence”, $t = .16, p = .88$ (Individual: $M = 2.63, SD = .55$; Team: $M = 2.62, SD = .57$) at $p > 0.05$ sig 2-tailed.

Table 4. Independent Sample t-Test (anxiety between the team and individual sports).

Levene's Test for Equality of Variances			T-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed) P
Cognitive Anxiety	9.54	.00	1.76	217.00	.08
			1.77	207.14	.08
Somatic Anxiety	10.60	.00	1.51	217.00	.13
			1.52	201.27	.13
Self-Confidence	.00	.98	.16	217.00	.88
			.16	216.10	.88

Note: $P < 0.05$ **. Sig (2-tailed).

Third, the study of the different anxiety experience (somatic, cognitive and self-confidence) in gender (male and female) athletes. Results (Table 5), revealed that there were significant differences between male and female athletes in the anxiety component which is self-confidence except for somatic anxiety and cognitive anxiety. The factors were “Cognitive anxiety”, $t = -1.02, p = .31$ (Male: $M = 2.29, SD = .46$; Female: $M = 2.36, SD = .52$), “Somatic anxiety”, $t = .23, p = .82$ (Male: $M = 1.86, SD = .44$; Female: $M = 1.85, SD = .47$) ($p > 0.05$) while “Self-confidence”, $t = 4.00, p = .00 < 0.05$ sig 2 tailed (Male: $M = 2.77, SD = .51$; Female: $M = 2.48, SD = .57$).

Table 5. Independent Sample t-Test (anxiety between male and female athletes).

Levene's Test for Equality of Variances			T-test for Equality of Means		
	F	Sig.	T	df	Sig. (2-tailed)
Cognitive Anxiety	2.70	.10	-1.02	217.00	.31
			-1.02	212.60	.31
Somatic Anxiety	.56	.46	.23	217.00	.82
			.23	215.88	.82
Self-Confidence	1.71	.19	4.00	217.00	.00
			4.00	214.42	.00

Note: $P < 0.05$ **. Sig (2-tailed).

DISCUSSION

The problem in the athlete performance is the feeling of anxiety in certain uncontrolled conditions even though athletes know that anxiety is very important to check and balance their readiness. Past studies have identified anxiety can affect athlete performance (Satyanarayana, Pooja & Nagraja, 2018). Therefore, in this current study, we investigated on how athletes experience anxiety during trainings and competitions. Specifically, we seek to assess the difference in anxiety between categories of sports, as well as gender differences.

In the first hypothesis, we hypothesized that there is no significant difference in anxiety experience level (somatic, cognitive and self-confidence) in both team and individual sports. This study was in line with the hypotheses we have developed. The result showed there were no differences of experience in somatic anxiety, cognitive anxiety and self-confidence among athletes between team and individual sports. The results may be affected as the data was taken during the Movement Control Order (MCO), where most of the competitions or trainings were disallowed. Hence, the athlete could not feel the adrenaline rushing through their nerves or the first hands on experience and even the anxiety of trainings and competitions. They were also not able to feel the pressure or anxiety of training and upcoming competition as the training was done individually. Since MCO, the athlete in team sports had train on their own as training as team were prohibited. Due to pandemic situation, athletes felt insecure with their performance, thus they did not feel the pressure. However, this study revealed contradicting results from the previous study. The athletes who trained at home individually without any internal or external pressure actually lead them to have nervous feelings. The earlier studies have stated that athletes who participated in individual sports were more committed with their skills and abilities. Hence, the athlete would feel pressure and this can cause negative expectations to gain success. It can be assumed that athletes who competing in individual sports have found themselves more nervous than team sports (Flowers, 2001). The highest level of concern amongst elite athletes is closely correlated with individual sports where judges assess their performances. The athletes are under enormous pressure to separate themselves from competition for success and the approval of the judges (Schaal et al., 2011). Moreover, in Sports and Performance Anxiety book by Arlin (2010) stated that common sense implies that forming a team will reduce the burden of rivals in themselves. Individual sports athletes also depend on their abilities and preparation to excel, whereas team sports athletes may rely on their teammates' help (Kajbafnezhad, Erlingsdottir & Saavedra, 2011).

Second, we earlier theorise that there were significant differences in the component of anxiety level (somatic, cognitive and self-confidence) between male and female athletes. However, the results have shown that only one of the components which are "self-confidence" has a significant difference among males and females. The current result is supported by a study from Woodman and Hardy (2003) stated that the mean self-confidence for male and female athletes was slightly significant difference. The finding can be interpreted that there is a contrast in the self-confidence experience between male and female athletes. The male athlete tends to have a big desire to win, in which that desire can lead them to feel more confident during or before the competition. On the contrary, female athletes tend to have lack of psychological states and it may be hard for them to cope with their emotional or psychological states during or before the competition, thus affect their self-confidence level become decreasing. A study from Lirgg and Feltz (1989) also stated that self-confidence was the accusation that females appear to show less confidence than males. Simultaneously, the gap of scoring between athlete and opponent is huge, the central nervous system will trigger the motor areas (from the cerebral cortex) to keep control of precise or skill voluntary movement in an uncontrolled and uncomfortable situation. While the peripheral nervous system otherwise will activate the sympathetic division by the 'fight-or-flight' system which prepares the body to cope with some threat or pressure by increasing somatic anxiety (heart rate, sweating, and vasoconstriction shunt blood from the skin to the heart and brain). The athlete is therefore unable to perform well under pressure and it will affect the athlete's ability to think he could win the competition. Ultimately, the athlete's self-confidence is decreasing.

Somatic anxiety and cognitive anxiety among males and females have some reasons why they have shown different results. Based on the result, there is no significant difference in cognitive (> 0.05). The current study shows contrasting results with the study by Fernandez et al., (2020) which displayed that female athletes have higher scores of emotional attention than male athletes. A study by

Kristjánsdóttir et al., 2018) also showed contrast result where in practice, male athletes achieved higher scores of automaticity, emotional regulation, competition relaxation, automatic competitiveness, and competition emotional regulation than female athletes. Whilst female athletes in practice achieved higher scores than male athletes in relaxation and self-talk practices only. The study above is different from what we have found in our study. The athletes from both genders do not feel the real pressure of trainings or competitions because of MCO. Therefore, the findings of this current study may show new findings. However, further research is suggested to investigate the current situation. Besides, the second component of CSAI-2 shows that there is no significant difference in somatic anxiety between male and female athletes since the p -value is $0.81 > 0.05$. The result from a study by Nisar and Hassan (2020) also showed that somatic anxiety between genders was not significant. The findings are in contrast with the results of the previous research that somatic anxiety was a significant difference when comparing the competitive state anxieties of handball and volleyball among University inter-collegiate men's players (Satyanarayana, Pooja & Nagraja, 2018). Our study shows contrast findings from the previous study. Mentioned this is because athletes train at home individually without any internal or external pressure which can lead them to have nervous feelings. Furthermore, athletes know that they have no upcoming competition due to MCO and the coaches cannot monitor them closely, so athletes only train to focus on their strength and fitness but not specific or tactical skills. Thus, this study can explain the outcomes of anxiety experience among the athletes, during the MCO.

CONCLUSION

Anxiety among athletes is common for those who participate in individual or team sports. The goal for optimum sports performance is easily interrupted by the nature of anxiety in the athletes. As well as the spontaneous thoughts and emotions can disrupt the performance. The coaches need to understand how athletes manage their emotions and deal with unpleasant feelings during the training or/and competition. Coaches and athletes need to approach sports psychologists to learn and prepare a detailed strategy to improve therapeutic skills and effective techniques in dealing with athletes' anxiety as well as encouraging them to eliminate unpleasant thinking and concentrate on positive results and not just positive outcomes. The finding of this research will encourage athletes to have better control of their performance while experiencing high anxiety, so an optimal level of concentration control is necessary to prevent athletes from experiencing under-pressure performance breakdown. The outcomes of this study provide the coaches and athletes who engaged in the team and individual sports to create the ability to prepare and execute the techniques to enhance the psychological well-being. Future studies should consider evaluating coach behavior and assessing the relationship between athletes and coaches. Positive coach behavior ultimately has cleared influences in athlete's performance and coach-athletes relationship, indirectly linked with the athlete's skills and abilities which significantly affect the athlete's sports performance and confidence (Kassim, Aznan & Halim, 2020; Murugeesan & Hasan, 2016). Furthermore, according to Kassim et al., (2020), the coach-athlete relationship can influence emotional feeling through closeness, facilitated by trust and respect. Therefore, coach's behavior is assumed to have a key part in constructing a positive or/and negative sports experience that encourages or discourages anxiety outcomes among athletes in the team and individual sports.

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