European Journal of Physical Education and Sport Science
ISSN: 2501 - 1235
ISSN-L: 2501 - 1235
Available on-line at: www.oapub.org/edu

doi: 10.5281/zenodo.1322153 Volume 4 | Issue 9 | 2018

COMPARISON OF ANXIETY AND SUCCESS IN SWIMMING WITH SOCIO-DEMOGRAPHIC CHARACTERISTICS

Aylin Zekıoglu[i]
Manisa Celal Bayar University,
Sports Science Faculty, Manisa,
Turkey

Abstract:
In the present study, the aim was to examine the anxiety levels of athletes that deal with swimming sports regularly in terms of success and some socio-demographic variables. A total of 116 people, who were selected according to the Convenient Sampling Method, and who were between the ages of 16 and 23, participated in the study. Fifty-seven of the participants were female (49.1%), and 59 were male (50.1%). The Illinois Anxiety Test, which consisted of 15 questions were applied to the participants. According to the results, the Internal Consistency Coefficient was found as Alpha = 0.73 for 15 items. This coefficient may be considered as being extremely high for a measurement scale consisting of 15 items, and therefore, the scale was accepted as reliable. The relations between the total scores received from the IAT Scale and the scores received by the participants in competitions were examined with the "Pearson Moments Multiplication Correlation Analysis". The average values, standard deviation values and similar descriptive statistical values for the scores received by the participants from the competitions and the total score received from the IAT Scale were recorded. The comparison between the total scores received by different socio-demographical groups and the scores received from the competitions in terms of the group averages was made with the One-Way Variance Analysis (ANOVA). The evaluation of the average values of these scores was done by employing the "Tukey-HSD Post-Hoc" test to determine between which groups the statistical differences were detected. A statistically significant difference was detected between the average scores of the IAT Scale total points that was formed according to the grades of the participants in the sample of the study [$F(4,111) = 6.692$; $p < 0.05$]. According to the results of the "Tukey-HSD Post-Hoc" Test, which was done to determine the source of the difference between the groups, those who were the 4th and 9th in the competitions had statistically higher anxiety scores than those who were 1st, 2nd, 10th and the rest. The results obtained in the present study were discussed in line with the data reported in the literature.

[i] Correspondence: email aylinzekioglu@yahoo.com

Keywords: swimming, success, anxiety, competition

1. Introduction

Sportive performance depends on biomechanical factors such as performance, condition, physiological and technical factors as well as psychological factors like anxiety, stress and motivation (Johns and Hardly, 1990).

It is already known that high or low anxiety levels before any competition have a reducing effect in terms of sportive performance. For this reason, it is required that athletes have neither a very high nor a very low level of anxiety before a competition. (Oner and Le Compte, 1983, Raglin, 1992).

In swimming, which is an individual sport, success depends on some psycho-motor characteristics such as ability, technique, speed, reaction and motion time. Anxiety, which includes some other psychological features such as anxiety, fear, and unrest, is another important effect on success. Anxiety causes to the fear that we might face something that is contrary to what we expect or think. Frequently, anxiety is defined as having conceptual, somatic, emotional, and behavioral components (Seligman and Rosenman, 2001).

Anxiety has the characteristic that begins to disrupt the structure of thinking and nerve structure before a person becomes aware by hurting motivation; and avoiding that the person acts in the direction of his/her aims by preventing happiness, causing physical disturbances, and moving the other people away. It collects all the negative emotions in it.

In addition to caring about physiological values in improving performance, psychological factors, which might also have an important place in this respect, have been a guide to be able to conduct a study on this issue. It should not be ignored that psychological factors such as anxiety -other than mental and motor skills- may also have important functions in improving performance.

Every race is significant for a performance athlete. In such a situation, everything can be a cause of pressure and anxiety for the athlete. Athletes show this in their physiological, mental, emotional and social reactions. Reducing the anxiety is only part of the struggle. It is easily seen how stress and anxiety are influential on athletes in important competitions. The important thing is to transform the anxiety into trust through the right channel and in a positive manner (Erbaş, 2000).

It is necessary to decide whether the anxiety is physical or mental in the prevention of the anxiety in swimming, which is an individual sport. Athletes with extremely high levels of anxiety might have difficulties by making different and mistaken decisions. Therefore, for the purpose of improving the performance in sports, it is necessary for the sports coaches to investigate the sport psychology; and to know the methods to eliminate the psychological and physiological obstacles that may arise (Tavacıoglu, 1999).

In swimming, in addition to the well-known significance of motor skills on success, the fact that these characteristics might be affected by anxiety shows what kind of a relationship exists between anxiety and success in swimming. In this study, the purpose was to examine the anxiety levels of athletes who deal with regular swimming sports in terms of success and different socio-demographic variables.

2. The Universe and Sampling

The universe of the present study consists of elite swimmers who deal with swimming sport in a professional manner. In the context of Illinois Anxiety Test, a total of 116 elite swimmers whose ages varied between 16 and 23 and who took part in competitions were included in the study as the sampling of the study.

3. The Application of the Inventory

The application of the study was performed in Izmir by applying the Illinois Anxiety Test form to the athletes during the preselection competitions of inter-club winter cup. All the applications were carried out during the 3-day racing season right before the athletes took part in races.

4. Material and Method

The 15-scale IAT Scale was used in the study to determine the anxiety levels of the elite swimmers before competition. The scoring of the scale is in the form of 3-Point Likert Style. In the scale, which was scores as “Very rarely”, “Sometimes”, and “Often”, and 1, 2, 3, there were 6 items that were scored reversely. These were 4, 6, 7, 10, 11 and 13th items. The scoring of the scale was in the form of having the total score after the conversion of the reverse items.

In addition, in the study, the questionnaire, which was prepared by the author of the study to determine the results received by the participants in the competitions and to determine the socio-demographical characteristics of the sampling.

4.1 The Analysis of the Data

The SPSS Package Program was used in evaluating all the data obtained in the data collection stage of the present study. First of all, in terms of the objective of the study and for research purposes, the number and percentage distributions of the sampling of the study were obtained and are given below according to sociodemographic variables. In the present study, numbers and percentage distributions which aimed to reveal the demographic characteristics of the players were used. The Cronbach Alpha Reliability Coefficient was calculated before the competition to determine the reliability level of the IAT Scale which was used to determine the anxiety status of the participants before the competition. The relation between the total score received from the IAT scale and the

scores of the competitors received from the competitions was examined by "Pearson Moments Multiplication Correlation Analysis". The total score received from the IAT scale, and the average, standard deviation, and other descriptive statistical values for the scores the players received from the competitions were obtained. In terms of group averages, the One-Way Analysis of Variance (ANOVA) was employed to compare the total scores of the different socio-demographic groups and the scores they obtained from the competitions.

The "Tukey-HSD Post Hoc" test was employed to determine the source of the statistical differences which were determined as a result of the evaluation of the average scores.

5. Findings

Table 1: The Number and Percentile Distribution of the Participants in terms of Sociodemographic Variables

Sociodemographic Variables		**n**	**%**
Age	16	35	30.2
	17	44	37.9
	18	13	11.2
	19 +	24	20.7
Sex	Male	59	50.9
	Female	57	49.1
Educational Status	High Scholl	84	72.4
	University	32	27.6
Total		116	100.0

Table 2: The Number and Percentile Distribution of the Participants in terms of Distance and the Scores

	Race Grade	**n**	**%**
	1.	14	12.1
	2.	11	9.5
	3.	14	12.1
	4.	11	9.5
	5.-9. +	30	25.9
	10 +	36	31.0
Total		116	100.0

In order to add the answers given to the 15-item IAT by the participants to obtain total scores, the scoring form of the reverse items was converted. In this way, items 4, 6, 7, 10, 11, and 13 were scored reversely and were included in the item analysis. The results of the item and reliability analysis of the scale was performed and the results are given below with the justification that if the total scores would be required for each item of the scale, and if the scores of the scale would be used in comparing the groups. In this respect, the internal consistency coefficient of the scale for 116 people and 15 items was found as Alpha=0.73. With this coefficient, which may be considered as extremely high

for a 15-item scale, the scale was accepted to be reliable and the total scores of the sub-groups were started.

Table 3: The Item Analysis and Reliability Analysis Results for the IAT Scale

Matter	Scale Average	Scale Variance	Scale Correlation	Scale Alpha
01	24.8793	22.1418	.0581	.7439
02	25.0690	19.1082	.6011	.6908
03	25.1552	19.4540	.4910	.7009
04	25.4483	21.6756	.1440	.7355
05	25.3190	20.7582	.2759	.7236
06	25.0086	19.0521	.4940	.6989
07	25.7931	22.3916	.0493	.7408
08	25.3966	20.8675	.2312	.7288
09	25.0086	20.1478	.3610	.7148
10	25.3103	20.1463	.3379	.7173
11	24.8621	18.4852	.5935	.6868
12	25.5000	20.2000	.3925	.7120
13	25.3103	21.5550	.1038	.7443
14	25.4569	20.6329	.2763	.7238
15	25.2069	18.6003	.5776	.6889

N = 116; Number of items = 15; Alpha =0.73

Before the sub-groups were compared with the One-Way Variance Analysis, the descriptive statistical values of the scores received by the participants from the IAT scale and from the competitions for the whole group was computed and given in the table below. In this respect, the range of the scores received by the whole group from the IAT scale varies between 19 and 37; and the average of the sampling is 27.05 ± 4.787. Similarly, the status of the sampling according to the scores received from the competitions is as follows. The range of the scores varied between 247 and 874 and the average score was 618.73 ± 123.947.

5.1 Comparing the Socio-Demographical Characteristics of the Sampling in Terms of the Scale Total Scores

In this part of the results, the results of the comparisons of the total scores received form the IAT Scale, which aimed to measure the anxiety level of the participants before the competitions, in terms of demographical groups are given.

Table 4: Comparison of Age Groups in terms of IAT Scale Total scores with One-Way Variance Analysis

Age	**n**		**Average**	**Standard Deviation**	
16	35		26.69	4.049	
17	44		28.09	5.447	
18	13		27.31	4.171	
19 +	24		25.54	4.597	
Total	116		27.05	4.787	
	Sum of Squares	**Degree of Freedom**	**Squares Average**	**F**	**P**
Between Group	107.783	3	35.928	1.592	.195
In Group	2527.907	112	22.571		
Total	2635.690	115			

There was no statistically significant difference between the total average scores of the age groups in IAT Scale total scores; $F(3,112)=1.592$; $p>0.05$.

Table 5: The Comparison of Gender Groups in terms of IAT Scale Total scores with One-Way Variance Analysis

Group	**n**		**Average**	**Standard Deviation**	
Male	59		26.07	4.975	
Female	57		28.07	4.399	
Total	116		27.05	4.787	
	Sum of Squares	**Degree of Freedom**	**Squares Average**	**F**	**P**
Between Groups	116.242	1	116.242	5.260	.024
In Groups	2519.448	114	22.100		
Total	2635.690	115			

There was a statistically significant difference between the IAT Scale total scores of the gender groups; $F(1,114)=5.260$; $p<0.05$. According to the result obtained, the IAT Scale total scores of the male participants were higher than those of the female participants. According to this result, male participants seem more anxious that female ones in terms of statistics.

Table 6: The Comparison of the Groups that were formed according to Educational Status in terms of IAT Scale Total scores with One-Way Variance Analysis

Groups	**n**		**Average**	**Standard Deviation**	
High Scholl	84		27.61	4.864	
University	32		25.59	4.317	
Total	116		27.05	4.787	
	Sum of Squares	**Degree of Freedom**	**Squares Average**	**F**	**P**
Between Groups	93.935	1	93.935	4.213	.042
In Group	2541.754	114	22.296		
Total	2635.690	115			

There was a statistically significant difference between the IAT Scale total scores of the groups that were formed according to the educational status of the participants;

F(1,114)=4.213; p<0.05. According to the results, the anxiety levels of the high school graduate participants were higher than those of the university graduates at a statistical level

Table 7: The Comparison of the Groups that were formed according to the Levels Received in the Competitions by the Participants in terms of IAT Scale Total scores with One-Way Variance Analysis

Groups	**n**		**Average**	**Standard Deviation**	
1.	14		23.93	4.178	
2.	11		25.00	4.219	
3.	14		26.64	4.700	
4.-9. +	41		29.71	4.611	
10 +	36		26.03	4.074	
Total	116		27.05	4.787	
	Sum of Squares	**Degree of Freedom**	**Squares Average**	**F**	**P**
Between Groups	512.087	4	128.022	6.692	.000
In Groups	2123.603	111	19.132		
Total	2635.690	115			

There was a statistically significant difference between the IAT Scale total scores of the participants in the sampling according to the levels received in the competitions; F(4,111)=6.692; p<0.05. According to the results of the "Tukey-HSD Post Hoc" test, which was done to determine the source of the difference between the groups, those who had levels between 4 and 9 were found to be more anxious when compared with those who had levels between 1, 2, and 10.

5.2 The Comparison of the Socio-Demographical Characteristics of the Sampling in Terms of Competition Scores

In this part of the results, the results of the comparison of the total scores received by the participants from the competitions in terms demographical groups are given.

Table 8: The Comparison of the Age Groups in terms of the Scores Received in Competitions with One-Way Variance Analysis

Groups	**n**		**Average**	**Standard Deviation**	
16	35		632.20	104.243	
17	44		607.86	125.521	
18	13		658.85	84.297	
19 Age+	24		597.29	160.299	
Total	116		618.73	123.947	
	Sum of Squares	**Degree of Freedom**	**Squares Average**	**F**	**P**
Between Groups	43497.283	3	14499.094	.942	.423
In Groups	1723223.432	112	15385.924		
Total	1766720.716	115			

There was no statistically significant difference between the scores of the age groups received in competitions; F(3,112)=0.942; p>0.05.

Table 9: The Comparison of the Gender Groups in terms of the Scores Received in Competitions with One-Way Variance Analysis

Groups	n		Average	Standard Deviation	
Male	59		610.32	137.712	
Female	57		627.44	108.420	
Total	116		618.73	123.947	
	Sum of Squares	**Degree of Freedom**	**Squares Average**	**F**	**P**
Between Groups	8493.799	1	8493.799	.551	.460
In Groups	1758226.916	114	15423.043		
Total	1766720.716	115			

There was a statistically significant difference between the score averages of the gender groups received in competitions; $F(1,114)=0.551$; $p<0.05$.

Table 10: The Comparison of the Groups that were formed according to the Educational Status in terms of the Scores Received from the Competitions

Groups	n		Average	Standard Deviation	
High Scholl	84		622.23	116.824	
University	32		609.56	142.584	
Total	116		618.73	123.947	
	Sum of Squares	**Degree of Freedom**	**Squares Average**	**F**	**P**
Between Groups	3716.138	1	3716.138	.240	.625
In Groups	1763004.577	114	15464.952		
Total	1766720.716	115			

There was a statistically significant difference between the scores of the groups that were formed according to the educational status of the participants in the competitions; $F(1,114)=0.240$; $p<0.05$.

Table 11: The Comparison of the Groups that were formed according to the Levels Received in Competitions by the Participants in terms of the scores received in Competitions with One-Way Variance Analysis

Groups	n		Average	Standard Deviation	
1.	14		758.93	74.225	
2.	11		690.36	56.262	
3.	14		670.29	79.317	
4.-9. +	41		615.29	106.851	
10 +	36		526.19	113.060	
Total	116		618.73	123.947	
	Sum of Squares	**Degree of Freedom**	**Squares Average**	**F**	**P**
Between Groups	677582.258	4	169395.564	17.264	.000
In Groups	1089138.458	111	9812.058		
Total	1766720.716	115			

There was a statistically significant difference between the score averages of the participants in the sampling in the groups that were formed according to the levels received in the competitions; $F(4,111)=17.264$; $p<0.05$. According to the result of the "Tukey-HSD Post Hoc" test, which was done to determine the source of the difference

between the groups, the competition scores of the participants who received 10th level in competitions were lower than those who had 1st, 2nd, 3rd and those between 4th and 9th level at a significant level. In addition, the competition scores of the participants who had competition scores between 4th and 9th levels were lower than those who were the 1st competitors in the competitions.

7. Discussion and Result

Competitions cause that the anxiety rises in athletes. However, in order to be successful in sportive competitions, it is considered that anxiety is needed. However, it was emphasized that this anxiety should be at optimal level depending on the type of the sports discipline. In the present study, the effect of anxiety before a competition in elite swimmers was investigated.

The sociodemographic information of the athletes, the levels and scores received by the participants in competitions, and the scores received from the Illinois Test were compared in statistical terms and the findings of the study were obtained. No statistically significant differences were detected between the Illinois Anxiety Test scale total score averages of the age groups.

A statistically significant difference was determined between the IAT Scale total score averages of the gender groups. According to the results obtained, the IAT scale total score averages of the males are higher. According to this result, males seem more anxious than females in statistical terms. Ozgul (2003) conducted a study and found out that there were no differences between the Situational Anxiety scores according to gender, and the Continuous Anxiety Scores were detected to be higher in females at a significant level. The researcher defended that this situation was because of the inclination of the female students to intense excitement reactions like insecurity, having nobody, restlessness, excessive sensitivity, and stress due to the fact that they are away from their families as well as the difficulties in their learning lives. However, contradictive findings on the effect of the gender groups on anxiety make it difficult to claim clear conclusions in this field (Ozturk, 1991; Raglin et al., 1992). In terms of the situational and continuous anxiety levels of the athletes, no significant difference was found according to the age variable. In the literature review, several studies were found that supported the findings of the present study of ours. Ozbekçi (1989) examined the basketball, volleyball and athletics players in terms of situational anxiety scores and found no relation between stress levels, age and competition stress levels. In another study, Arseven and Guven (1992) analyzed the data on the anxiety levels in competitions for athletes from different branches which they divided into two groups (basketball, handball, volleyball and athletics) according to age groups and did not see a significant relation between the results they obtained. A statistically significant difference was detected between the IAT Scale total score averages of the groups that were formed according to the educational status of the participants. According to the

results, the anxiety levels of the people who are high school graduates are higher than those who are university graduates at a statistically significant level.

A statistically significant difference was detected between the IAT Scale total score averages of the participants received in the competitions. In this respect, those who had levels between 4th and 9th in competitions were found to be more anxious than those who were 1st and 2nd and 10th and more. However, Raglin et al. conducted a study (1990) and did not detect a difference between the groups which were grouped and evaluated according to successful or failure status. In another study, the results supported these results (Morgan, 1987). Aşçı and Gokmen (1995) conducted a study in female handball players and found a negative correlation between the anxiety levels and success. In other words, as the anxiety levels increased, the success levels decreased. Yucel (2003) conducted a study on the effects of situational and continuous anxiety levels of the taekwondo players on the success in competitions; and found a significant relation between the success of the athletes and their situational and continuous anxiety levels. They found that the situational anxiety before a competition was as high as the importance of a competition (Cox, 1990). Thirer and O'Donnel (1980), Maynard and Howe (1987) and Murphy and Woolfolk (1987) concluded that there was no relation between the competition anxiety and motor performance. According to the results obtained in the study, no significant relation was detected on the effect of anxiety on success. Anxiety has possible effects on gender differences, educational status and the scores received form competitions. It may be considered that future studies that will be conducted with wider sampling groups in different sports branches or in team sports will yield better results in understanding the effect of sports on success and anxiety by adding other concepts to these.

7.1 Recommendations

Future studies that will be conducted with wider sampling groups in different sports branches or in team sports will yield better results in understanding the effect of sports on success and anxiety by adding other concepts to these. The study may be conducted by applying it to different sports branches and to team sports. Imagining the targets in the mind is an efficient way in realizing them; and may help prevent anxiety. An athlete who constantly thinks about the result and acquisitions starts to feel anxiety about the results. In order to avoid this, s/he must think on controllable targets.

References

1. Seligman, Walker & Rosenhan, (2001). Anxiety in Sport. (4th.ed). New York: W. W. Norton & Company
2. Tavacıoglu, L. (1999). (ed), Spor Psikolojisi, Ankara, Bagırgan Yayımevi, 29
3. Morgan W. P., O'. Connor P. J., Sparling P. B. and Pate R. R. (1987) Psychological characterization of the elite female distance runner. Int J Sports Med 8 (Suppl.),124-131

4. Raglın J. S., Morgan W. P., Wıse K. J. (1990). Pre-competıtıon anxiety and performance in female high school girl swimmers: a test of optimal function theory. Int J Sports Med,11:171 – 175
5. Ozturk F., (1991). Sporda stres. Spor musabakaları anksiyete testi.1-53, Bursa
6. Raglin J. S. (1992). Anxiety and sport performance. Exercise and Sport Sciences Reviews Vol. 20, 243 – 274
7. Jones G.; Hardy L. (1990). The Academic study of Stress in Sport, Stress and Performance in Sport, John Wiley and Sons, Ckichester, , 3-5
8. Oner N., Le Compte A. (1983). Durumluluk/Surekli Kaygı El Kitabı, B.U. yayınları, Istanbul, No:333
9. Raglin J. S. (1992). Anxiety and Sport Performance, Exercise and Sport Sciences Reviews, , 20:243-274
10. Erbas, M. (2000). Turkiye Basketbol II. Ligindeki Oyuncuların Bazı Kisisel Degiskenlerinin Durumluk Kaygı Uzerine Etkileri ve Durumluk Kaygının Takım Ici iliskilerine Etkisinin Arastırılması, Trakya Universitesi, Sosyal Bilimler Enstitusu¨, Yuksek Lisans Tezi,. Edirne, 38, 41, 70
11. Tavacıoglu, L. (1999). Spor Psikolojisi. Sporsal Kuram Dizisi 23, Bagırgan Yayınevi, Ankara, 39- 44
12. Arseven, A., Guven, O. (1992). Sporcuların musabaka ortamındaki anksiyete duzeyleri. Ankara: H.U. Spor Bilimleri II. Ulusal Kongresi.
13. Ozbekçi, F. (1989). Farklı spor dallarında yaşanan musabaka stres duzeylerinin arastırılması. Yayımlanmamıs Yuksek Lisans Tezi. M.U. Sosyal Bilimler Enstitusu. Istanbul.
14. Ozgul, F. (2003). Beden Egitimi ve Spor Yuksek Okulu Ogrencilerinde Durumluk ve Surekli Kaygı Duzeyleri, Yuksek Lisans Tezi, Cumhuriyet Universitesi Saglık Bilimleri Enstitusu, Sivas.
15. Yucel, E. O. (2003). Taekwondocuların Durumluk ve Surekli Kaygı Duzeyleri ve Musabakalardaki Basarılarına Etkisi, Yuksek Lisans Tezi, Gazi Universitesi Saglık Bilimleri Enstitusu Beden Egitimi ve Spor Anabilim Dalı, Ankara.
16. Cox, Richard H. (1990). Sport Psychology, Concepts and Applications, Second Edition, Wm. C. Brown Publishers, Dubuque
17. Thirer, J. ve O'Donnell, L. A. (1980). Female Intercollegiate Athletes Trait Anxiety Level and Performance in a Game. Perceptual and Motor Skills. 50, 478-487. 18- Maynard, I. W. ve Howe, B. L. (1987). Interactions of trait and State Anxiety with Game performance of Rugby Player. Perceptual and Motor Skills. 64, 599-602.
18. Murphy, S. M. ve Woolfolk, R. L. (1987). The Effects of Cognitive Interventions and Competitive Anxiety and performance on Fine Motor Skill Accuracy Task. International Journal of Sport Psychology. 18, 152-166.
19. Gill, D. (1986). Psychological Dynamics of sport. Champaign, Illinois: Human Kinetic Publishers Inc.