



EXAMINING THE DEPRESSION LEVELS OF WATER SPORTS PLAYERS IN TERMS OF DIFFERENT SOCIO-DEMOGRAPHIC VARIABLES

Aylin Zekiogluⁱ

Manisa Celal Bayar University,
Sports Science Faculty,
Manisa, Turkey

Abstract:

In this study, the purpose is to examine the depression levels of regular water sports players in terms of different variables. The sampling of the study was formed by using the Convenient Sampling Method. A total of 92 people whose ages varied between 17 and 28 participated in the study; and 24 of them were women (26.1%), and 68 were men (73.9%). Sixty-one of the players (66.3%) dealt with water polo, 21 dealt with (22.8%) swimming, 10 dealt with (10.9%) underwater rugby. The participants answered the questions in the Beck Depression Scale, which consisted of 21 questions. According to the results of the reliability analysis, which was made for Beck Depression Scale, the reliability of the scale was determined as 0.94, which is an extremely high value. In the present study, numbers and percentiles of the independent variables, descriptive statistics of the dependent variables (Beck Scale Total Score), reliability (Alpha) and Item Analysis for the Beck Scale, One-Way Variance Analysis (ANOVA) between independent and dependent variables; and when differences were detected between the groups in the variance analysis, the Tukey-b Multiple Comparisons Test was applied to make comparisons between the groups. There were statistically significant differences between the total scores of the three Beck Scale groups, which were formed according to the sports branches the players dealt with; $F(2,89)=3.646$; $p<0.05$. According to the result of the Tukey-b Multiple Comparison Test, which was applied to determine from which group the statistically significant difference stemmed, it seemed that the group that dealt with swimming was more depressive than the group that dealt with water polo and underwater rugby; and the group that dealt with water polo seemed more depressive than the group that dealt with underwater rugby. In other words, the Beck Depression Scale scores of these groups were determined to be higher than those of the other groups. The results obtained in the analyses were discussed in line with the literature data.

ⁱ Correspondence: email aylinzekioglu@yahoo.com

Keywords: depression, swimming, underwater rugby, water polo

1. Introduction

Depression is defined as the state that emerges with the loss of pleasure in ordinary activities, sadness, feeling of guilt and insignificance, inappetence, insomnia and loss of sexual desire (Davidson and Neale, 1994). Depression is a normal reaction to many situations that create stress in life. Many times, it is possible that some conditions such as failure at school, sports or at work; losing someone loved; and diseases or old age, which consumes the resources of the individual, may be considered as depression (Atkinson et al., 1990). According to the Cognitive Model, inherited, environmental and biological factors play efficient roles in the formation of depression. However, aside from the factor that starts depression, the structure and viewpoint of the individual play very important roles in the continuance of the mood (Gönenir Erbay & Kartalçı, 2012).

However, although doing sports is beneficial as a therapeutic method to eliminate boredom and depression, especially the depression in competition players where stress and tension are extreme may cause injuries and decrease their concentrations; and such players may have depression following their injuries (Kokrek et al., 1996).

The positive effects of sports and physical activity on the health of the body are known as well as their positive effects on spiritual health. When the literature was reviewed, it was observed that the studies conducted in this field are mostly on puberty period. In recent years, studies conducted on teenagers have reported that physical activities have positive effects on self-perception, peer-to-peer relations, and academic achievement (Van de Loo et al., 1995; Faigenbaum, 2000). It has been reported that physical activity in puberty period is beneficial for physical health of young individuals both in present time and in further years in terms of feeling healthier and more fit (Meffulli, 1992; Açıkada, 2004). It was determined that there is a reversely-proportional relation between sport and physical activity and stress, anxiety and depression levels; and there is a directly-proportional relation between self-esteem and self-perception (Berger et al., 1983).

In sports, the already-anxious situation before a competition can “push” us to depression. Especially relieving the tense muscles from head to foot and relaxing by changing breathing can be a method (Syer et al., 1998).

In a study that investigated the relationship between personality traits and sporting activities, O. Neumann compared young performance athletes and non-athletes; and reported that the athletes were more hard-working, more vigorous, and were more prepared to engage in relationships, were more persevering; and could adapt to difficult conditions better. In the present study, it was determined that those who did sports were more extrovert and emotionally-balanced than those who did not do any sports (Tiryaki, 1991; 2000).

Many athletes become concerned depending on the level of arousal before competitions start. As it is already known, excessive anxiety reduces concentration; and meanwhile, increases disability risks, which is the cause of the formation of negative thoughts. This situation appears as a decrease in continuity (durability) or a continuous loss in efficiency levels (Suinn, 1986). Studies conducted so far showed that there are certain differences between those who do team sports and those who do individual sports in terms of personality traits. Those who do individual sports are less anxious, more self-sufficient and more independent than those who deal with team sports (Cratty, 1973). It was determined that those who deal with individual sports are more self-confident, self-centered, and have high reactive features in terms of developing their abilities on their own; and they are more nervous and angrier, and more spontaneous (James et al., 1983). In a study conducted in the United States, it was determined that 50% of the visits of general practitioners were stress-related. In this respect, one of the non-traditional programs is the short-term or chronic exercise practices. The results of previous studies show that exercise is associated with improvements in anxiety and depression levels (Artal, 1988).

Additionally, it was also reported in previous studies that participation in long-term exercise programs increased self-esteem (Ozturk, 1997). One of the negative consequences of exercise is *Exhaustion Syndrome*. In this respect, as trainings increase, mood disorders become more severe. Exhaustion Syndrome occurs due to the disturbance of the balance between training and relaxation. It reveals itself with not proceeding in trainings and poor performance in competitions. The known treatment of Exhaustion Syndrome is “resting” (Artal, 1988).

Athletes who have depression are those who show psychological breakdown. Depression occurs with psychomotor manifestations in such athletes, and they mention anxieties and fears they cannot explain. The worry and suspicion in athletes may involve being not able to show a good contest, losing the competition, and therefore, a possible penalty may be involved as well. Such athletes must be given fewer duties, and relevant people should talk to them and tell them that losing or winning competitions is natural. For this, it is necessary to define the personality traits of athletes beforehand. Shy and skeptic athletes consider everything and everybody with suspicion, and prefer to live alone away from others (Başer, 1998).

2. Material and Method

2.1 Participants

The study population consists of the elite athletes who deal with swimming, water polo and underwater rugby sports in a professional manner. A total of 92 people, 24 women (26.1%) and 68 men (73.9%) from the Aegean Water Sports and Tennis Specialty Club, Işıkkent Swimming Club, Goztepe Swimming Club, Istanbul Swimming Specialization Club, ENKA Club and Izmir Metropolitan Municipality Underwater Rugby Team whose ages varied between 17 and 28 participated in the study. A total of 61 (66.3%)

participants stated that they played water polo, 21 (22.8%) swimming, and 10 (10.9%) underwater rugby. A total of 92 athletes were included in the present study as the sampling. The number and percentile distributions of the socio-demographic variables of the participants i.e. the questions in the questionnaire form, which was formed to examine the effects of water sports on depression levels of the athletes, are shown in relevant parts.

2.2 Method

Beck Depression Scale: It was applied to determine the levels and severity of the depressive symptoms of the students. It includes a total of 21 self-evaluation statements, and each item is given points between 0 and 3. The validity and reliability study of the scale was conducted (Hisli, 1989). In this study, it was determined that 17 cut-off points were adequate in determining the clinical depression.

2.3. Application

The application was made in Izmir and Istanbul with completely individual applications. The individuals were asked whether they wanted to participate in the scientific study voluntarily or not, and those who wanted to participate voluntarily were given the scale and the questionnaire form to answer. The participant who wanted to abandon the study was allowed to quit without showing any reasons. The application for one single individual lasted between 15 and 20 minutes.

2.4. The Analysis of the Data

In the study, the numbers and percentile distributions of the independent variables, the descriptive statistics of the dependent variable (Beck Scale Total Score), reliability (alpha) for Beck Scale and item analysis was made; the One-Way Variance Analysis (ANOVA) was applied between the independent variables and the dependent variables; the Tukey-b Multiple Comparison test was applied to make comparisons between the groups for whom significant differences were detected in the variance analysis.

3. Results

Table 1: The Distribution of the Number and Percentiles of the Independent Variables

Sociodemographic Variables		n	%
Sex	Female	24	26.1
	Male	68	73.9
Age	18	11	12.0
	19	19	20.7
	20	10	10.9
	20 +	52	56.5
Educational Status	High School	14	15.2
	University	78	84.8
Income status	400-600 TL	17	18.5

Aylin Zekioglu
EXAMINING THE DEPRESSION LEVELS OF WATER SPORTS PLAYERS
IN TERMS OF DIFFERENT SOCIO-DEMOGRAPHIC VARIABLES

	600-800 TL	40	43.5
	800-1000 TL	21	22.8
	1000 TL +	14	15.2
Sport Branch	Water Polo	61	66.3
	Swimming	21	22.8
	Underwater Rugby	10	10.9
Duration Engaged in Sport	3-5	19	20.7
	5-7	9	9.8
	7-9	21	22.8
	9 +	43	46.7
Total		92	100.0

The number and percentile distributions of the 7 independent variables included in the questionnaire of the study are given in the table above.

Table 2: The Definitive Statistics of the Beck Scale Total Scores

Variable	N	Minimum Value	Maximum Value	Median	Standard Deviation
Beck Depression Scale Total Score	92	14.00	84.00	34.3370	12.73507

The descriptive statistics of Beck Scale Total scores are given above. According to the results, the mean of the scale was 34.337 ± 12.73507 .

Table 3: The Results of Item Analysis and Reliability Analysis

Matter	Scale Average	Scale variance	Total Correlation	Scale Alpha
01	34.24	148.236	.735	.938
02	34.32	149.937	.649	.939
03	34.14	152.968	.565	.940
04	34.08	151.071	.574	.940
05	34.11	154.000	.525	.941
06	33.91	145.287	.667	.939
07	33.86	151.147	.622	.939
08	34.04	146.165	.746	.937
09	34.48	157.920	.368	.942
10	34.00	149.077	.665	.939
11	33.99	145.833	.717	.938
12	34.24	152.416	.486	.941
13	33.73	149.941	.541	.941
14	34.38	152.187	.605	.940
15	33.87	151.856	.505	.941
16	33.73	146.762	.689	.938
17	33.94	145.983	.746	.937
18	34.13	147.625	.722	.938
19	34.08	144.712	.759	.937
20	34.03	143.922	.828	.936
21	34.15	147.310	.676	.938

N = 92; Number of items = 21; Alpha = 0.94

According to the reliability analysis, which was made for the Beck Scale, the reliability of the scale was determined as 0.94, which is a very high value.

Table 4: The Results of the Comparison of the Gender Variable with One-Way Variance Analysis in terms of Beck Scale Total Scores

Sex	n	Average	Standard deviation		Sum of squares	Degree of freedom	Squares average	F	p
Female	24	37.3333	14.95694	Between Groups	291.530	1	291.530	1.814	.181
Male	68	33.2794	11.79533	In Groups	14467.025	90	160.745		
Total	92	34.3370	12.73507	Total	14758.554	91			

There were no statically significant differences between the Beck Scale Total averages of the gender groups; $F(1,90)=1.814$; $p>0.05$.

Table 5: The Results of the Comparison of the Age Variable with One-Way Variance Analysis in terms of Beck Scale Total Scores

Age	n	Average	Standard Deviation		Sum of squares	Degree of freedom	Squares Average	F	p
18	11	36.2727	13.96489	Between Groups	207.082	3	69.027	.417	.741
19	19	35.6316	12.94523	In Groups	14551.472	88	165.358		
20	10	30.7000	7.14998	Total	14758.554	91			
20 +	52	34.1538	13.37599						
Total	92	34.3370	12.73507						

There were no statistically significant differences between the Beck Scale Total Averages of the 4 groups formed according to age groups; $F(3,88)=0,417$; $p>0.05$.

Table 6: The Results of the Comparison of the Educational Status Variable with One-Way Variance Analysis in terms of Beck Scale Total Scores

Educational Status	n	Average	Standard Deviation		Sum of squares	Degree of freedom	Squares Average	F	p
High school	14	37.3571	13.87642	Between Groups	150.622	1	150.622	.928	.338
University	78	33.7949	12.53811	In Groups	14607.932	90	162.310		
Total	92	34.3370	12.73507	Total	14758.554	91			

There were no statistically significant differences between the Beck Scale Total Averages of the groups that were formed according to the educational status of the individuals; $F(1,90)=0.9280$; $p>0.05$.

Table 7: The Results of the Comparison of the Income Status Variable with One-Way Variance Analysis in terms of Beck Scale Total Scores

Income status	n	Average	Standard Deviation		Sum of squares	Sum of squares	Squares Average	F	p
400-600 TL	17	33.8824	13.53183	Between Groups	1213.719	3	404.573	2.628	.054
600-800 TL	40	33.7750	11.57470	In Groups	13544.835	88	153.919		
800-1000 TL	21	30.4762	10.13222	Total	14758.554	91			
1000 TL +	14	42.2857	16.02128						
Total	92	34.3370	12.73507						

There was a statistically significant difference between the Beck Scale Total Averages of the 4 groups that were formed according to the income status of the individuals; $F(3,88)=2.628$; $p<0.05$. After determining the statistical difference, according to the Tukey-b Multiple Comparison Test, which was made to determine which group was different from others; all groups were different from each other. When the average scores of the groups in the scale were examined, it was observed that as the income levels of the individual increased, so did the depression levels. According to the results, each group is more depressive than the group that has lower income level than itself.

Table 8: The Results of the Comparison of the Sports Branch Variable with One-Way Variance Analysis in terms of Beck Scale Total Scores

Sport Branches	n	Average	Standard Deviation		Sum of squares	Sum of squares	Squares Average	F	p
Water Polo	61	33.3770	11.70066	Between Groups	1117.674	2	558.837	3.646	.030
Swimming	21	40.0476	15.66996	In Groups	13640.880	89	153.268		
Under Water Rugby	10	28.2000	7.56894	Total	14758.554	91			
Total	92	34.3370	12.73507						

There was a statistically significant difference between the Beck Scale Total Averages of the 3 groups that were formed according to the sports branch of the individuals; $F(2,89)=3.646$; $p<0.05$. After determining the statistical difference, according to the Tukey-b Multiple Comparison Test, which was made to determine which group was different from the other group, the group that dealt with swimming seemed more depressive than the groups that dealt with water polo and underwater rugby; and the group that dealt with water polo seemed more depressive than the group that dealt with underwater rugby. In other words, their Beck Scale score averages were higher.

Table 9: The Results of the Comparison of the Sport-doing Period Variable with One-Way Variance Analysis in terms of Beck Scale Total Scores

Duration Engaged in sport	n	Average	Standard Deviation		Sum of squares	Sum of squares	Squares Average	F	p
3-5	19	29.9474	9.14983	Between Groups	637.901	3	212.634	1.325	.271
5-7	9	34.1111	12.35359	In Groups	14120.654	88	160.462		
7-9	21	33.4286	11.17842	Total	14758.554	91			
9 +	43	36.7674	14.55177						
Total	92	34.3370	12.73507						

There were no statistically significant difference between the Beck Scale Total scores of the 4 groups that were formed according to the sports doing years of the individuals; $F(3,88)=1.325$; $p>0.05$.

4. Discussion and Conclusion

Most of the studies conducted on athletes mention the benefits of sports and physical activities in psycho-social terms and in terms of health. The contribution of sports to physical, spiritual and mental development is known. Additionally, it also has positive effects on the development of self-esteem and leadership properties of individuals. In some studies conducted on professional athletes, it was reported that their anxiety levels were high, and they had depressive and chronic exhaustion symptoms during intense workout periods (Karakaya et al., 2006).

In the present study of ours, no statistically significant differences were determined between the Beck Depression Scale Total Averages of the gender groups. In another study, no significant difference was determined between gender groups (Karakaya et al., 2006). When we evaluate the differences between the men and women groups, no significant differences were detected between the women and men in the study group. This result is parallel to that reported by Smith in 1993. In some other studies, it was reported that there were no significant differences between women and men in terms of depression levels (Hisli, 1989; Smith et al., 1993; Ayverdi, 1990). There were no statistically significant differences between the Beck Depression Scale Total averages of the 4 groups that were formed according to the age groups. We may associate this situation with the fact that age groups were very close to each other.

There were no statistically significant differences between the Beck Depression Scale Total averages of the groups that was formed according to the educational status. We may associate this situation with the fact that most of the subjects in our study were university graduates.

There was a statistically significant difference between the Beck Depression Scale Total averages of the 4 groups that were formed according to the income status of the individuals. When the average scores of the groups in the scale were considered, it was

seen that as the income status of the individuals increased so did their depression scores. According to the results, each group is more depressive than the group that has lower income status than itself.

In the present study of ours, there was a statistically significant difference between the Beck Depression Scale Total averages of the 3 groups that were formed according to the sports branch of the individuals. The group that dealt with swimming seemed more depressive than the group that dealt with water polo and underwater rugby; and the group that dealt with water polo seemed more depressive than the group that dealt with underwater rugby. In other words, their average scores received from the Beck Depression Scale were higher. However, in another study, a reversely proportional relation was determined between the sports and physical activities and stress, anxiety and depression levels; and a directly-proportional relation was reported between the self-esteem and self-perception levels (Berger et al., 1983). In a study which was conducted on the sports that required individual competition, it was observed that the athletes who had stress and tension more had depression although doing sports is beneficial for eliminating boredom and depression (Kokrek et al., 1990). In the present study, a significant difference was determined between the depression levels in swimming sports, which is considered as an individual sport, and the other water sports that require struggling.

In our study, no statistically significant differences were determined between Beck Depression Scale Total averages of 4 groups according to the years they did sports; and there was no statistically significant difference between Beck Depression Scale Total averages of the 2 groups according to the success in sports of the individuals. We can associate the training and competitive personalities of professional athletes starting from early ages with the development of goal-targeted and perfectionist personality traits. This may be associated with an increase in the level of anxiety of the athletes, especially in intense workout periods. In some studies, the behaviors of coaches were also reported to be an important factor in anxiety and depression levels of athletes (Pensgaard et al., 2002; Baker et al., 2000).

Unlike the positive effects of sports on self-esteem and depression symptom levels, the height of anxiety levels determined in swimmers can be associated with performance. However, athletes, who are unable to gain control over their anxiety during childhood, may face difficulties in other areas of their lives. Perhaps, the results of ours confirm these. For this reason, especially the coaches must have the qualifications that may make the athletes acquire the skills such as confidence, being part of the team and controlling the excitement during the races. Meanwhile, parents should also be informed about supporting, encouraging, and not converting motivating into suppression for the children who deal with sports (Karakaya et al., 2002).

When the results of our study were considered in an integrity, it was observed that competition athletes who are stressed and who face tension more in individual sports have depression. It is believed that similar studies with larger participants in which this study is methodically repeated, especially by considering the sports done by

individuals are cared much, will give clearer results. This comment; however, at the same time constitutes both the limitations and the recommendations of the present study. This makes the present study a preliminary one; and shows that there is a need for an actual study.

References

1. Artal M., (1998). Exercise Ageist Depression, *The Physician Sportmedicine*, 26-10
<https://doi.org/10.3810/psm.1998.10.1171>
2. Atkinson RL, Atkinson RC, Smith EE, Bem DJ, Nolen SH.(1990). *Hilgard's Introduction to Psychology* (12 th Edition), University of California, San Diego, 539
3. Acıkada C. (2004). Training in children. *Acta Orthop Traumatol Turc*; 38(suppl.1):16-26
4. Ayverdi, M., (1990). Erken Ergenlik Donemi Ergenlerinin Depresyon Duzeylerini Etkileyen Bazı Dıs Etmenler. Yayınlanmamıs yuksek lisans tezi. Hacettepe Universitesi, Ankara (Sosyal Bilimler Enstitusu).
5. Baser E. (1998). *Uygulamalı Spor Psikolojisi Performans sporunda Psikolojinin Rolu*, Bagırgan Yayınevi, 278, Ankara,
6. Baker J., Cote J., Hawes R. (2000); The relationship between coaching behaviors and sport anxiety in athletes. *J Sci Med Sport*; 3:110-119.
[https://doi.org/10.1016/S1440-2440\(00\)80073-0](https://doi.org/10.1016/S1440-2440(00)80073-0)
7. Berger B. G., Owen D. R. (1983).Mood alteration with swimming-summer really do "feel better". *Psychosom Med*, 45:425-433.
8. Cratty B. J. (1973). *Psychology in contemporary sport*, Englewood cliffs: NJ., Prentice Hall,
9. Davidson G., Neale J. M. (1994). *Abnormal psychology* (6th ed.). New York: John Wiley & Sons, Inc. <https://trove.nla.gov.au/work/5802571>
10. Faigenbaum A. D. (2000). Strength training for children and adolescents. *Clin Sports Med*; 19:593-619.
11. Goonenir Erbay, L., & Kartalçı, S. (2012). Depresyonda bilissel davranısscı terapi. *Tuurkiye Klinikleri Psikiyatri Ozel Sayısı*, 5(2), 97-102.
12. Hisli N (1989). Beck Depresyon Envanterinin Universite Ogrencileri için gecerliligi ve guvenirligi. *Psikoloji Dergisi*, 7:3-13.
13. James W. Johnson D. W. (1983). The relationship between attitudes towards social interdependence and psychological health within three criminal populations, *Journal of Social Psychology*, 221, 31-143
14. Karakaya, I.; Coskun, A.; Agaoglu, B. (2006); Yuzuculerin depresyon, benlik saygısı ve kaygı duzeylerinin degerlendirilmesi, *Anatolian Journal of Psychiatry*; 7:162-166

15. Kokrek, Z., Torun, K., Balcioglu, İ. (1996): Sakatlık Geciren Bireysel Mucadele Sporcularında Depresyon Faktörünün Araştırılması, Yeni Symposium 34(3-4), s. 68-71
16. Meffulli N. (1992). The young child in sport. Br Med Bull; 48:561-568
17. Ozturk O. (1997). Ruh Sağlığı ve Bozuklukları, Medikomat Basımevi, Ankara
18. Pensgaard A. M., Roberts G. C. (2002); Elite athletes' experiences of the motivational climate: the coach matters. Scand J Med Sci Sports ; 12:54-59
<https://doi.org/10.1034/j.1600-0838.2002.120110.x>
19. Smith A. M., Stuart MJ, Wiese DM, Milliner EK (1993). Competitive athletes. Preinjury and post injury mood state and self-esteem. Mayo Clin Proc. (68): 939-947
20. Syer J., Connolly C. (1998). Sporcular için Zihinsel Antrenman Rehberi, Ceviren: F. Umur Erkan, Bağrgan Yayınevi, 85-87, Ankara
21. Tiryaki S. (1991). Sportif performans ile Edwards Kisisel Tercih Envanteri verilerinin ilişkisi, Spor Bilimleri Dergisi, 2(2), 32-37
22. Tiryaki S. (2000). Spor Psikolojisi, Eylül Yayınları, Ankara,
23. Van de Loo D. A., Johnson M. D. (1995). The young female athlete. Clin Sports Med, 14:687-707.

Aylin Zekioglu
EXAMINING THE DEPRESSION LEVELS OF WATER SPORTS PLAYERS
IN TERMS OF DIFFERENT SOCIO-DEMOGRAPHIC VARIABLES

Creative Commons licensing terms

Authors will retain the copyright of their published articles agreeing that a Creative Commons Attribution 4.0 International License (CC BY 4.0) terms will be applied to their work. Under the terms of this license, no permission is required from the author(s) or publisher for members of the community to copy, distribute, transmit or adapt the article content, providing a proper, prominent and unambiguous attribution to the authors in a manner that makes clear that the materials are being reused under permission of a Creative Commons License. Views, opinions and conclusions expressed in this research article are views, opinions and conclusions of the author(s). Open Access Publishing Group and European Journal of Physical Education and Sport Science shall not be responsible or answerable for any loss, damage or liability caused in relation to/arising out of conflict of interests, copyright violations and inappropriate or inaccurate use of any kind content related or integrated on the research work. All the published works are meeting the Open Access Publishing requirements and can be freely accessed, shared, modified, distributed and used in educational, commercial and non-commercial purposes under a [Creative Commons attribution 4.0 International License \(CC BY 4.0\)](https://creativecommons.org/licenses/by/4.0/).