International Journal of
Active & Healthy Aging

e-ISSN :3023-6045
https://ndpapublishing.com/index.php/ijaha

Resilience Capacity and Life Skills of Paralympic Athletes

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Article Info
Received: 22.09.2024
Accepted: 15.12.2024
Published:30.12.2024

Keywords
Athlete
Life Skills
Paralympic
Paralympic Games
Resilience

ABSTRACT

The current study aims to examine the relational resilience capacity and life skills of Paralympic athletes in terms of various variables. The population of the study includes athletes affiliated with the Turkish National Paralympic Committee (TMPK). The sample of the study consists of 50 athletes, 18 females and 32 males, who participated in the Paralympic Games in 2022-2023. The data were collected with the "Relational and Operational Resilience Capacity Scale at the Individual Level" nd "the Life Skills Scale for Sport", as well as the demographic information form. Normality tests were conducted as well as descriptive statistics in the analysis of the data. Independent samples T-tests were used for pairwise comparisons, and one-way Way Anova tests were used for multiple comparisons since the data were normally distributed. The Pearson Correlation test was used in correlation analysis. Findings of the study revealed that there were no significant differences between the relational resilience capacities and life skills of Paralympic athletes in terms of sex, disability type, branch type, age, education level, and duration of athletics, whereas there was a significant positive relationship between the relational resilience capacities and life skills of athletes.

1. INTRODUCTION

The positive effects of sports throughout life are undeniable in disabled individuals just as in healthy individuals. Based on the idea that "disability is not an obstacle to doing sports," it is known that disabled people are more aware of sports, which improves their quality of life and ability to overcome potential problems they may face throughout their lives. In this regard, considering sports' contributions to physical and mental development and their benefits to social development, the current study will provide insight into the extent of their effects on disabled athletes' life skill levels and resilience capacities.

The concept of resilience refers to an organization's ability to overcome unexpected and destructive events with minimal damage and emerge stronger. Organizations that can be "resilient" have the ability to transform potential threats into advantages and successfully overcome the transformation in this process [1].

The positive adaptation process in case of a significant challenge is defined as "resilience" in the sports literature [2-4]. In sport, resilience refers to the role of mental stages and events in influencing individual behavior, as well as protection from the effects of negative situations [2,4].

The concept of life skills has also been frequently emphasized in recent years and explained by the World Health Organization [5] as "adaptive and positive behavioral skills that enable individuals to cope with daily needs and challenges." WHO lists some life skill elements that healthy individuals should have as "decision-making skills, problem-solving skills, critical thinking skills, self-awareness skills, communication skills, interpersonal relationship skills, coping with emotions, coping with stress, creative thinking skills, and empathy skills" [5-6].

The content of concepts of life skills and resilience are significant concepts for individuals with special needs and disabilities. In fact, it is understood that there may be factors affecting sportive results for disabled athletes. The level of life skills in disabled athletes was thought to have an effect on their resilience capacity. Based on this research problem, it will be possible to test the

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How to cite this article
Doğanel, E.D., and Katkat, D. (2024). Resilience Capacity and Life Skills of Paralympic Athletes. Physical Activity Level and Health. *Int. J. Act. Health Aging, 2(2),38-44*

Research Article/ DOI: 10.5281/zenodo.14549047

effects of sports-related life skills on Paralympic athletes. It is believed that the current study is an important issue for determining the life skill levels and relational resilience capacities of Paralympic athletes in this regard.

In this regard, it is thought that the Paralympic athletes experience many challenges due to their disabilities, and the skills they need when dealing with the problems they need to overcome are the life skills and the concept of resilience, which is the key factor in adapting to the situation by developing different perspectives even under pressure while seeking solutions, and it was concluded that it would be beneficial to conduct research on the effects of these two concepts on Paralympic athletes.

2. MATERIALS AND METHODS

This study aimed to assess the life skills and relational resilience capacities of Paralympic athletes using the relational screening model, one of the quantitative research models. The study population consisted of 87 Paralympic athletes who were affiliated with the Turkish National Paralympic Committee (TMPK) and participated in the 2020 Tokyo Olympics [7]. A purposive sampling method was used to select a sample group of 50 Paralympic athletes.

The data were collected with the ''Demographic Information Form'', the Life Skills Scale for Sport, and the Relational and Operational Resilience Capacity Scale at the Individual Level. The scales prepared online were applied to the athletes. For visually impaired athletes, data were collected with the help of an accompanist. The following scales were applied in addition to the demographic information form developed for information on sex, age, education level, branch type and duration of athletics.

The study protocol was approved by the Mersin University Ethics Committee of Sport Sciences Research (Ethics Committee Approval: 03042023/5). Participant provided informed consent, with the volunteer form covering research details, risks, benefits, confidentiality, and participant rights. The research strictly adhered to the ethical principles of the Declaration of Helsinki, prioritizing participant's rights and well-being in design, procedures, and confidentiality measures.

2.1. The Life Skills Scale For Sport

The Life Skills Scale for Sport Scale developed by [8] as a 5-point Likert scale to assess life skills were between the ages of 18-25, 44% were between the ages of 26-35, and 24% were 36 years and older. acquired through sports was adapted to Turkish culture by [9]. The scale consists of seven sub-dimensions (teamwork, goal setting, time management, emotional skills, communication, social skills and leadership) and 31 items in total. The statements in the scale are scored on a 5-point Likert scale ranging from (1 point) “Strongly disagree” to (5 points) “Strongly agree”. There are no reverse scored statements in the scale. Within the scope of the reliability study, the internal consistency coefficient was calculated as .92. The lowest score that can be obtained from the scale is 31 and the highest score is 155 [9]. The degree of the scores obtained from the scale expresses the level of the effect of sport on life skills.

2.2. Relational and Operational Resilience Capacity Scale at the Individual Level

Relational and Operational Resilience Capacity Scale at the Individual Level developed by [10] was used. A Likert-type scale (1-5) was used to evaluate the scale statements. The scale has a structure consisting of 18 statements, two sub-dimensions and two factors. The scale, which will address the sustainability and survival dimensions of relational resilience capacity, consists of nine questions and two factors. The minimum score will be nine and the maximum score will be 45. The degree of the scores obtained from the scale expresses the individual's capacity for relational resilience.

2.3. Statistical Analysis

The results of the normality tests revealed that the data met the parametric test assumptions. According to the results of normality tests, a t-test for independent groups was used for pairwise comparisons, and the One-Way Anova test was used for multiple comparisons. Pearson Correlation analysis was performed to investigate whether there is a relationship between life skill levels and relational resilience capacities of Paralympic athletes. The analysis of the data obtained from the research was interpreted through computerized statistical programs. Cronbach's Alpha test was used for the reliability analysis of the scales prepared for the study.

3. RESULTS

Among the Paralympic athletes who participated in the study, 18 (36%) were female and 32 (64%) were male. It was determined that 32% of the Paralympic athletes participating in the study
In terms of education level, 32% were high school graduates or below, 68% were university graduates

or above, 12% had a low level of income, 80% had a medium level of income and 8% had a high level of income. In terms of the duration of being a Paralympic athlete, it was seen that 48% were athletes for 1-7 years, 48% for 8-15 years and 4% for 16 years or more. It was observed that 52% of the athletes were congenitally and 48% were subsequently disabled. It was found that 74% of the athletes were physically disabled, 18% were visually impaired and 8% were hearing impaired. It was observed that 74% of the Paralympic athletes participating in the study were engaged in individual sports, while 26% were engaged in team sports. It was understood that 6% of the athletes' social security was provided by the federation, 12% by the Ministry of Youth and Sports, 4% by the club, 36% by themselves and 42% by others. It was seen that 88% of the earned wage was paid by the Ministry of Youth and Sports and 12% by the club. It was concluded that 68% of the Paralympic athletes participating in the study were engaged in a job other than sports, while 32% were not engaged in any job other than sports.

The reliability analysis of the Relational Resilience Capacity Scale at the Individual Level and the Life Skills Scale for Sport revealed that the reliability of the Relational Resilience Capacity Scale at the Individual Level was α=0.983 and the reliability of the Life Skills Scale for Sport was α=0.981. Since the Cronbach Alpha (α) value is above 0.7, the reliability of the scale [11] is high.

The findings obtained from the Kolmogorov-Smirnow (*K-S*) test results related to the Relational Resilience Capacity Scale at the Individual Level and the Life Skills Scale for Sport revealed that the scale data were normally distributed (Relational Resilience Capacity Scale at the Individual Level *K-S*=.244; *p*>0.05) and (the Life Skills Scale for Sport *K-S*=.181; *p*>0.05). Since the sample size was larger than n=35, the Kolmogorov-Smirnow (*K-S*) test was applied and since the test result was *p*>.05, the distribution of the data was accepted as normal [12-13].

Table 1. ANOVA test on relational resilience capacity of Paralympic athletes by age variable

Groups	N	X̄	SD	F	p
18-25	17	31.70	12.42	256	.775
26-35	22	34.04	12.48		
36 and above (3)	11	31.36	11.20		
Total	50	32.66	12.01		

p<.05

According to the finding obtained, it was concluded that there was no difference in the scores of Paralympic athletes from the Relational Resilience Capacity Scale at the Individual Level in terms of age variable (F=.256; p=.775, p<.05).

Table 2. ANOVA test on life skills level of Paralympic athletes by age variable

Groups	Main	X̄	SD	F	p
18-25	17	31.70	12.42	256	.775
26-35	22	34.04	12.48		
36 and above (3)	11	31.36	11.20		
Total	50	32.66	12.01		

p<.05

It was concluded that there was no difference in the scores of Paralympic athletes from the Life Skills Scale for Sport by the age variable (F=.530; p=.592, p<.05).

Table 3. ANOVA test on relational resilience capacity of Paralympic athletes by disability type

Disability type	N	X̄	SD	F	p
Physically disabled (1)	37	31.05	12.66	1.482	.238
Visually impaired (2)	9	35.88	10.45		
Hearing impaired (3)	4	40.25	.957		
Total	50	32.66	12.01		

p<.05

In the analysis of the comparison of the scores of the Paralympic athletes from the Relational Resilience Capacity at the Individual Level Scale according to the type of disability variable, it was concluded that there was no significant difference in the Relational Resilience Capacity at the Individual Level of the Paralympic athletes by disability type (F=1.482; p=.238, p>.05).

Table 4. ANOVA test on life skills levels of Paralympic athletes by disability type

Disability type	N	X̄	SD	F	p
Physically disabled (1)	17	124.67	26.99		
Visually impaired(2)	22	131.00	13.50		
Hearing impaired (3)	11	142.75	7.41	1.124	.334
Total	50	127.26	24.40		

p<.05

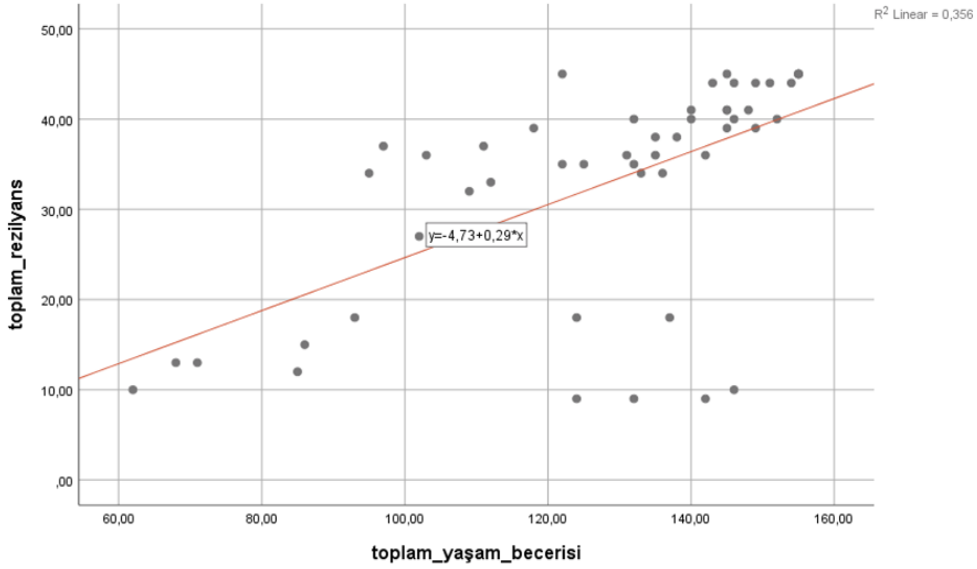
In the findings regarding the comparison of Life Skills of Paralympic athletes by disability type, it was concluded that there was no significant difference in Life Skills of Paralympic athletes by disability type (F=1.124; p=.334, p<.05).

Table 5. The relationship between resilience capacity and life skill levels of paralympic athletes (pearson correlation analysis)

Variables	N	X̄	SD	r	p
Rel.Resilience Capacity at the Ind. Level	50	32.66	12.01	.597**	.000
The Effect of Sport on Life Skills	50	127.26	24.40		

p<.01

The effect of relational resilience capacities of Paralympic athletes (x̄=32.66, sd=12.01) on life skills (x̄=127.26, sd=24.40) was tested with Pearson Correlation Analysis and a moderate positive (r=.597) and significant (p=.000, p<.01) relationship was found between relational resilience capacities and life skill levels of Paralympic athletes. Graph 1 shows this relationship.



Graph 1. The relationship between resilience capacity and life skill levels of paralympic athletes

4. DISCUSSION

Literature review reveals that there are not many studies on relational resilience levels, which is the subject of the study, and there is no study with the sample group of Paralympic athletes. Therefore, it has become important to conduct a study on the concept of resilience in Paralympic athletes. Based on the limited number of studies on the life skills of Paralympic athletes, the findings of the study on the concept and components of life skills are

remarkable in terms of the results emphasized below.

There was no difference between Relational Resilience levels of Paralympic athletes by age without physical disabilities supports the result of the current study. The fact that there is no resilience in the sample group. On the other hand, although there was no statistically significant difference, it was determined that the age group with the highest mean level of resilience consisted of Paralympic athletes aged 26-35 ($\bar{x}$=34.04).

According to Erikson's psychosocial development theory, this may be explained by the period of "productivity versus stagnation" [16]. During this period, individuals utilize their existing knowledge and experience to generate new ideas and show strong determination, resulting in greater positive achievements compared to other age groups. Therefore, it can be concluded that individuals demonstrate their abilities without losing motivation in challenging situations, exhibit a reduced susceptibility to harm, and can be differentiated based on their capacity to generate alternative solutions in a high-pressure competition compared to other age groups.

On the other hand, there was no difference between the Life Skills of Sport levels of Paralympic athletes by age groups (p>.05). In other words, the age factor is not effective on life skills. However, since disability is the common point of Paralympians, it is normal that their life skills are similar. Nevertheless, in terms of mean values, it was observed that the life skill scores of the athletes between the ages of 26-35 were higher. According to the results of [17]'s study on the life skills levels of the students in the faculty of sport sciences, no difference was found.

No difference was found between the Relational Resilience levels of Paralympians by disability type (p>.05). In other words, the type of disability does not affect the level of resilience, and the resilience levels of the athletes are similar regardless of the disability type. The main variable is the status of "being disabled". In fact, [18-19] found similar results in their studies on disabled athletes. The findings and the results in the literature indicate that no difference can be explained by the "functionalist theory" [20]. This approach can be interpreted as functionalist theory attributes a positive, reinforcing, integrative meaning to sport (integrative function) and that sport contributes to social integration and, perhaps most importantly, resilience/adaptability, and that it creates similarities and differences in resilience levels because it offers everyone the opportunity to benefit equally from sports regardless of the type of disability. On the other hand, there was no difference between the age groups means that the age factor is not effective on the level of

groups (p>.05). The fact that no difference was found according to the results of [14] on physically disabled athletes and [15] on athletes with and

difference between the Life Skills of Sport levels of Paralympians by disability type (p>.05). In other words, the disability type does not have different effects on life skills. The results of [21]'s study on disabled people are similar.

The study examined the relationship between relational resilience capacities and life skill levels of paralympic athletes and found that there was a significant positive relationship. This finding shows that sports promote the ability of disabled individuals to adjust to unforeseen circumstances (resilience), as well as accelerate the process of social integration about life skills and enhance the acquisition of specific abilities such as problem-solving and coping with stress. It was concluded that the life skills of paralympic athletes increased in a linear manner with their resilience capacities thanks to sports, and the resilience skills of disabled athletes whose life skills improved also increased. The literature review shows that [22] found a positive relationship between psychological resilience levels and cognitive flexibility levels of disabled athletes. This is explained by the fact that the positive contributions of sports are effective on individuals with disabilities. Another study examining the relationship between positive thinking and stress in athletes with disabilities reported that positive thinking tendency increased as stress decreased [23]. It was emphasized that individuals' levels of coping with stress, one of the components of life skills, enabled them to maintain their lives happier and more positively with sports. When the present study was designed, it was expected that sports would have positive effects on disabled athletes in terms of life skills. On the other hand, it is noteworthy that the resilience capacities of athletes with disabilities, specifically their psychological resilience, exhibit a linear increase in response to negative factors such as audience pressure, stress related to representing their nation, psychological challenges posed by opponents, interactions with referees, and competitive pressure in sports. The positive components as well as the negative components of sports create linear positive effects on individuals with disabilities.

5. Conclusion

The aim of the present study consists of hypotheses on the effect of the resilience concept on athletes, their individual differences and the variables from which these differences may arise. This study was designed to determine the resilience capacities of paralympic athletes, to investigate whether there may be individual differences according to some parameters and to determine whether life skills affect their resilience status. It was found that the life skills of paralympic athletes increased in a linear manner with their resilience capacities thanks to sports, and that the resilience skills of athletes with disabilities who developed life skills also increased. However, conducting a reverse hypothesis by examining the extent to which sport truly enhances life skills and resilience in Paralympians, in comparison to non-athlete individuals with disabilities, would enhance the significance of the research field. The remarkable progression of Paralympians, particularly those who participate at the Olympic level, in developing their life skills and resilience, despite the inherent physical, social, and psychological challenges of the sport, shows the therapeutic influence of sports on individuals with disabilities.

If the healing power of sport in this regard is proven through repeated studies, paralympic sport, para-sport events and para-mega sport organizations will be of great value as the number of people with disabilities in the world is approximately 10% of the total population. Moreover, these para-Olympic activities have the potential to be highly marketable and can be incorporated into collaborative betting organizations to generate brand value and capital on a global scale. Individuals with disabilities have the potential to become athletes and contribute to the field of sports, thereby creating added value. This will increase the number of athletes participating in the paralympic sports, just like the approximately 10,000 athletes participating in the summer Olympic games.

Acknowledgement

This paper has been edited by a native language editör.

Conflict of Interest

No conflict of interest is declared by tehe authors. In addition, no financial support was received.

Ethics Committee

The study protocol was approved by the Mersin University Ethics Committee of Sport Sciences Research (Ethics Committee Approval: 03042023/5).

Author Contributions

Study Design, AK, BÇ; Data Collection, AK, OB; Statistical Analysis, AK, NK; Data Interpretation, AK; Manuscript Preparation, AK, BÇ, NK; Literature Search, AK, KU, OB. All authors have read and agreed to the published version of the manuscript.

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