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RESEARCH ARTICLE

Investigation of Basic Psychological Needs in Physically Disabled Athletes

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Abstract
Basic psychological needs are fundamental elements that influence individuals' motivation, performance, and overall well-being. These needs reside at the core of human behavior and constitute factors that determine individuals' psychological health and satisfaction. The purpose of this study is to examine the satisfaction and frustration of basic psychological needs among physically disabled athletes across various variables. A total of 128 athletes, including 68 males and 60 females in sitting volleyball and wheelchair basketball participated in the research. In the current study, to assess the satisfaction and frustration of basic psychological needs, the 'Psychological Need States in Sports Scale' was employed. Data collected via Google Forms were converted into the appropriate file format by the researchers and relevant hypothesis tests were applied using the JASP 0.15.0.0 statistical analysis software. In the autonomy satisfaction subscale, it was determined that male athletes (5.25 ± 2.26) obtained higher scores compared to female athletes (4.42 ± 1.99) ($p<.05$). In the competence frustration and relatedness frustration subscales, there is a statistically significant difference in favor of male athletes ($p<.05$). In the competence satisfaction and relatedness satisfaction subscales, the mean scores of first division athletes are significantly higher than those of the other group ($p<.05$). Moreover, in the competence frustration and relatedness frustration subscales, the scores of second division athletes are statistically significantly higher than those of the other group ($p<.05$). As conclusion, it can be stated that male and first – division physically disabled athletes have a higher level of satisfaction with their basic psychological needs.

Keywords
Self – Determination Theory, Well Being, Performance, Handiccaped

INTRODUCTION

Self-Determination Theory is a frequently referenced framework in the field of psychology, offering crucial insights into the understanding of athletes' motivation, performance, and well-being. Positioned at the heart of human motivation and behavior, the theory identifies psychological needs, focusing on three concepts: autonomy, competence, and relatedness (Deci & Ryan, 2000). Autonomy refers to the sense of individuals owning their behaviors, choices, and decisions (Chirkov et al., 2003). An autonomy-supportive environment assists athletes in enhancing their intrinsic motivation, leading to increased participation in activities, exerting more effort, and maintaining a longer-term interest in sports (Deci & Ryan, 1987). When athletes feel autonomous, they experience a higher level of psychological well-being (Adie et al., 2008). Furthermore, athletes' self-control and self-direction abilities assist in delivering more effective performance during training and competitions (Reinboth et al., 2004). Competence, considered as a fundamental component of an individual's intrinsic motivation, well-being, and overall life satisfaction, represents a belief or feeling that one can effectively utilize their abilities and skills while interacting with their environment (Deci et al., 1991). Athletes who feel competent and effective possess a higher intrinsic

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motivation (Deci et al., 1991). In athletes, the belief in their own abilities enhances learning processes and boosts athletic performance (Harter, 2015). Thanks to the belief in their abilities, athletes experience positive mood states and a higher level of life satisfaction (Quested & Duda, 2010). Relatedness, grounded in an evolutionary basis (Baumeister & Leary, 2017) refers to people's mankind's need to connect with their social environment, to be accepted, and to feel valued (McMillan & Chavis, 1986). The sense of relatedness helps athletes to be more eager and determined (Ryan & Deci, 2000). A strong sense of relatedness among athletes leads to more harmonious and effective teamwork (Bruner et al., 2014), enhancing athletes' ability to cope with challenges (Rees & Hardy, 2000). Sports affects all individuals in different ways (Ilhan, 2008). It is possible to observe a much greater positive effect on individuals with special needs than it does on individuals with normal development (Demir et al., 2017). Psychological factors come first among these positive effects (Ilhan, 2010; Yarimkaya et al., 2016).

Sport, by providing an environment that supports basic psychological needs, enhances athletes' motivation, performance, and overall well-being through athletic activities. In particular, for physically disabled athletes with a high potential for social isolation and exclusion (Shapiro & Martin, 2010), the satisfaction of basic psychological needs emerges as a significant problem that needs to be addressed.

Disabled athletes may face different challenges compared to non-disabled athletes. Foremost among these challenges is the feeling of being different or excluded by those around them (Martin, 2013). The mobility or physical abilities of disabled athletes lead to specific challenges in sports (Van de Vliet et al., 2008). Disabled athletes also require specialized equipment and practices in terms of equipment, facilities, or training methods (DePauw & Gavron, 2005). Non-disabled athletes, on the other hand, have to cope with challenges such as high-performance pressure (Hanton et al., 2005), fear of injury (Walker, Thatcher, & Lavallee, 2007), and negative body image (De Bruin et al., 2007). The reasons for the low participation rates of physically disabled individuals in sports can be listed as architectural barriers, inability to access appropriate sports wheelchairs, institutional policy and practice deficiencies, discrimination, and societal attitudes (Rimmer et al., 2005).

Research on basic psychological needs is frequently conducted in the fields of education (Niemiec & Ryan, 2009), work life (Gagné & Deci, 2005), health (Williams et al., 1998), interpersonal relationships (La Guardia et al., 2000), clinical psychology (Ryan et al., 2011) and sports (Adie et al., 2008). In the field of sports, the focus is primarily on performance (Deci & Ryan, 2000; Reinboth & Duda, 2006), psychological well-being (Deci & Ryan, 2008), and the coach-athlete relationship (Amorose & Anderson-Butcher, 2007). Therefore, the number of studies related to individuals with disabilities is limited. The aim of this research is to examine the satisfaction and frustration of basic psychological needs in physically disabled athletes in terms of various variables.

MATERIALS AND METHODS

Research Model

In the study, a quantitative research method was employed. The research was designed in a survey model. In quantitative research, the survey model is a commonly used method where the skill or attitude levels of individuals included in the study concerning a subject or event are determined (Büyüköztürk et al., 2008).

Participants

In the study, a total of 128 disabled athletes, comprising 68 males and 60 females, who have been licensed for at least 2 years in sitting volleyball and wheelchair basketball and are actively participating in sports, voluntarily took part. The age of the athletes ranges between 18 – 48, with an average age of 30.96 ± 11.77.

For this research, ethical approval was obtained from Atatürk University Faculty of Sport Sciences Ethics Committee on 24.04.2023 with reference number 72. Study was conducted in accordance with Helsinki Declaration.

Data Collection Tools

In the study, a personal information form created by the researchers was used to collect demographic data of the participants. Additionally, to assess the satisfaction and frustration of basic psychological needs, the 'Psychological Need States in Sports Scale (PNSSS)', developed by Bhavsar and colleagues (Bhavsar et al., 2020) in

2020, and translated into Turkish by Sarı and colleagues (Sari et al., 2022) in 2022, was utilized.

To measure the satisfaction and frustration of athletes' basic psychological needs, the PNSSS, applied in a seven-point Likert format (1 = Strongly Disagree, 7 = Strongly Agree), consists of 29 items. The scale comprises six sub-dimensions: autonomy satisfaction (5 items - e.g., "I feel freedom in making decisions about training"), autonomy frustration (5 items - e.g., "I feel excessive pressure"), competence satisfaction (5 items - e.g., "I can overcome challenges"), competence frustration (4 items - e.g., "I feel inept"), relatedness satisfaction (5 items - e.g., "I feel valued"), and relatedness frustration (5 items - e.g., "I feel ignored"). In the adaptation of the scale into Turkish, a study with 589 athletes revealed that the Cronbach α values for the sub-dimensions were higher than .70, thereby affirming the scale as a reliable measuring tool.

Data Collection

The participant information form and the Psychological Need States in Sports Scale were prepared online by researchers using Google Forms and were administered online between May and August 2023. In the initial part of the online form application, detailed explanations about the scale were provided, and participants' voluntary consents were obtained online in the same manner.

Statistical Analysis

Data collected via Google Forms were converted into the appropriate file format by the researchers and relevant hypothesis tests were applied using the JASP 0.15.0.0 statistical analysis software. A normal distribution test was conducted to determine the type of hypothesis test (parametric / non-parametric) to be applied in data analysis. Decisions on whether the data were normally distributed were made by examining the Skewness, Kurtosis, Shapiro Wilk, Kolmogorov – Smirnov, and Q – Q plots values. Since the obtained data showed a normal distribution, parametric tests, namely the independent samples t-test and ANOVA hypothesis tests, were used.

RESULTS

Table 1. Comparison of Subscale Average Scores of Female and Male Athletes using Independent Sample T-Test

Subscale	Gender	n	M	s.d.	t	p
Autonomy Satisfaction	Male	68	5,25	2,26	2,195	**0,030***
	Female	60	4,42	1,99		
Autonomy Frustration	Male	68	2,29	0,87	-2,447	**0,016***
	Female	60	2,73	1,20		
Competence Satisfaction	Male	68	6,05	1,67	1,543	0,125
	Female	60	5,52	2,20		
Competence Frustration	Male	68	1,21	0,42	-3,390	**0,001****
	Female	60	1,64	0,95		
Relatedness Satisfaction	Male	68	5,62	1,80	0,798	0,426
	Female	60	5,34	2,22		
Relatedness Frustration	Male	68	1,29	0,52	-4,976	**0,001****
	Female	60	2,00	1,04		

* p<.05, ** p<.01

The findings related to the Psychological Need States in Sports Scale for male and female athletes are shown in Table 1. When examining the autonomy satisfaction subscale of the Psychological Need States in Sports Scale, the average scores of male athletes (5.25 ± 2.26) were found to be higher than those of females (4.42 ± 1.99) (p<.05). In the autonomy frustration subscale, it was determined that the values belonging to men (2.29 ± 0.87) were lower than those of women (2.73 ± 1.20) (p<.05). Although the average scores belonging to men in the competence satisfaction and relatedness satisfaction subscales were higher than those of women, it was observed that there was no statistically significant difference between genders (p>.05). Statistically significant differences were found in favor of men in the competence frustration and relatedness frustration subscales (p<.05).

Table 2. Comparison of Subscale Average Scores of Athletes Competing in Upper and Lower Divisions Using the Independent Samples T-Test

Subscale	Division	n	M	s.d.	t	p
Autonomy Satisfaction	First Division	71	6,31	1,11	12,698	**0,001****
	Second Division	57	3,06	1,77		
Autonomy Frustration	First Division	71	2,45	0,90	-0,533	0,595
	Second Division	57	2,55	1,22		
Competence Satisfaction	First Division	71	6,78	0,65	7,579	**0,001****
	Second Division	57	4,59	2,32		
Competence Frustration	First Division	71	1,27	0,67	-2,423	**0,017***
	Second Division	57	1,59	0,81		
Relatedness Satisfaction	First Division	71	6,54	0,98	8,114	**0,001****
	Second Division	57	4,19	2,19		
Relatedness Frustration	First Division	71	1,39	0,86	-3,534	**0,001****
	Second Division	57	1,92	0,81		

* p<.05, ** p<.01

Findings related to the Psychological Need States in Sports Scale for athletes competing in first and second divisions are shown in Table 2. When examining the autonomy satisfaction subscale of the Psychological Need States in Sports Scale, athletes competing in the first division scored 6.31 ± 3.06, while those in the second division scored 3.06 ± 1.77, showing lower values than the other athletes (p<.05). Although the scores obtained by athletes competing in the second division for the autonomy frustration dimension were higher, no statistically significant difference was observed between the groups (p>.05). For competence satisfaction and relatedness satisfaction subscales, the average scores of the first division athletes were significantly higher than the other group (p<.05). For the competence frustration and relatedness frustration subscales, it was found that scores of the second division athletes were statistically significantly higher compared to the other group (p<.05).

Findings related to the Psychological Need States in Sports Scale based on participants' athletic experience are shown in Table 3. In the autonomy satisfaction subscale of the Psychological Need States in Sports Scale, scores for athletes with more than ten years of experience are 5.50 ± 1.73, those with 5-10 years of experience are 5.02 ± 2.24, and for athletes with less than five years of experience, the scores are 4.18 ± 2.29. In the autonomy satisfaction subscale, the average score of athletes with more than ten years of experience significantly differs from those with less than five years of experience (p<.05).

In competence satisfaction and relatedness satisfaction subscales, despite the highest scores being in athletes with more than ten years of experience, no statistically significant difference was observed between the groups (p>.05). In the autonomy, competence, and relatedness frustration subscales, no statistically significant difference was found between the groups (p>.05).

Table 3. Comparison of Subscale Average Scores in Terms of Participants' Athletic Experience Using the ANOVA Test

Subscale	Experience	n	M	s.d.	F	p	Post Hoc
Autonomy Satisfaction	A) 0 - 5 Years	48	4,18	2,29	4,483	**0,013***	C > A
	B) 6 - 10 Years	39	5,02	2,24			
	C) 10+ Years	41	5,50	1,73			
Autonomy Frustration	A) 0 - 5 Years	48	2,29	1,08	2,237	0,111	
	B) 6 - 10 Years	39	2,48	1,18			
	C) 10+ Years	41	2,76	0,84			
Competence Satisfaction	A) 0 - 5 Years	48	5,55	2,36	0,703	0,497	
	B) 6 - 10 Years	39	5,89	1,97			
	C) 10+ Years	41	6,02	1,30			
Competence Frustration	A) 0 - 5 Years	48	1,40	0,64	1,539	0,219	
	B) 6 - 10 Years	39	1,27	0,55			
	C) 10+ Years	41	1,56	0,98			
Relatedness Satisfaction	A) 0 - 5 Years	48	5,38	2,39	1,338	0,266	
	B) 6 - 10 Years	39	5,20	1,96			
	C) 10+ Years	41	5,90	1,46			
Relatedness Frustration	A) 0 - 5 Years	48	1,83	1,00	2,108	0,126	
	B) 6 - 10 Years	39	1,46	0,68			
	C) 10+ Years	41	1,55	0,86			

* p<.05

DISCUSSION

This study aims to examine the satisfaction and frustration of basic psychological needs in physically disabled athletes. The findings indicate that male disabled athletes experience higher satisfaction in terms of basic psychological needs compared to females (p<.05). These results underscore the influence of gender on the satisfaction of basic psychological needs. The higher scores achieved by male athletes, particularly in autonomy satisfaction, may be attributed to factors such as the unique nature of sports or societal expectations. Greater autonomy satisfaction can lead male athletes to participate more actively in sports, exert more effort, and engage in sports activities for longer durations. This can contribute to enhancing their intrinsic motivation for sports activities (Deci & Ryan, 1987). In the study conducted by Harvey and Retter (2002), it was reported that there was no significant difference in the satisfaction of the autonomy need in terms of gender (Harvey & Retter, 2002).

Furthermore, statistically significant differences favoring male athletes were found in the dimensions of competence frustration and relatedness frustration (p<.05). These results demonstrate that male athletes experience less frustration in these needs, resulting in a more positive sports experience. Lower levels of frustration can help athletes feel more competent

and effective, thus enhancing their intrinsic motivation (Deci et al., 1991). Contrary to these findings, in the research conducted by Demir and İlhan (2019), there was no significant difference in terms of gender in the intrinsic motivation sub-dimension.

These findings indicate that elite-level physically disabled athletes experience a higher level of satisfaction in their basic psychological needs compared to their counterparts in lower-level leagues ($p<.05$). This heightened level of satisfaction may contribute to enhanced psychological well-being among elite athletes and a more positive approach to their sports. These results shed light on how the league level in which physically disabled athletes compete can impact their basic psychological needs. The reasons behind the higher satisfaction level among elite athletes may be attributed to factors such as increased support, resources, or accumulated experience. However, for a more comprehensive understanding of these findings, future research should delve deeper into this subject. Furthermore, the lower scores in the frustration of basic psychological needs among elite athletes in the upper league suggest that these athletes experience fewer impediments to their basic needs ($p<.05$). Reduced levels of frustration can potentially boost athletes' self-confidence in their abilities and enhance their internal motivation (Deci et al., 1991).

The obtained results indicate that physically disabled athletes with more experience in terms of duration have a higher level of autonomy satisfaction ($p<.05$). These findings support the idea that sports experience can enhance the sense of autonomy and lead athletes to feel more in control of their own behavior (Quested & Duda, 2010). Furthermore, the positive effects of long-term sports experience on autonomy satisfaction appear to be consistent with previous research in the literature. For instance, Vallerand et al. (1992) found that long-term participation in sports increased intrinsic motivation and supported a sense of autonomy among athletes (Vallerand et al., 1992). In this context, it can be stated that long-term experience in sports may enhance autonomy satisfaction among athletes, consequently making them more motivated and committed. For a better understanding and generalization of these results, future research is needed. Furthermore, considering the limitations of this study, more comprehensive research examining the satisfaction and frustration of basic psychological needs is required. In this way, more effective strategies can be developed to better address the psychological needs of physically disabled athletes.

Conflict of Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethics Committee Permission

For this research, ethical approval was obtained from Atatürk University Faculty of Sport Sciences Ethics Committee on 24.04.2023 with reference number 72.

Researchers' Contribution

Study Design, SSD; Data Collection, FA and SSD; Statistical Analysis, FA; Data Interpretation, FA and SSD; Manuscript Preparation, FA and SSD; Literature Search, FA and SSD.

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