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Burnout Status of U18 Women's National Ice Hockey Team Players in Turkey

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Abstract
This study aimed to determine the athletic burnout of the under-18 (U18) women's ice hockey national team players and examine their burnout levels in terms of age, education level, sports history, training frequency, inability to participate in a match due to COVID-19, and history of injury. The research population consisted of the U18 women's ice hockey national team players in Turkey. The sample comprised 27 athletes randomly selected from the target population based on voluntariness. A questionnaire consisting of two parts was used as a data collection tool. The first part of the questionnaire included a personal information form developed by the researcher to determine the characteristics of the participants, such as age, education level, sports history, training frequency, whether they missed any ice hockey matches due to COVID-19, and history of injury. In the second part, the Athlete Burnout Questionnaire, developed by Raedeke and Smith in 2001 and adapted to Turkish by Kelecek et al. in 2016, was administered to measure the athletic burnout levels of the participants. The research findings revealed that the athletes' burnout levels were generally low, but those with a history of disability lasting longer than three months and those that missed ice hockey matches due to COVID-19 had higher burnout levels compared to the remaining participants.

Keywords: Women's Ice Hockey, Burnout, COVID-19

1. Introduction

1.1 Introduce the Problem

In ice hockey, which is described as one of the most difficult team sports in the world (ESPN, 2021), athletes go through an intense, difficult, and long process in order to reach a high level of performance. The ongoing pandemic conditions have further complicated this process since athletes have had to deal with additional situations, such as tournament/league/match and training cancellations and being deprived of athletic activities. This difficult process experienced can cause both physical and psychological exhaustion in athletes, which emerges as burnout.

1.2 Explore Importance of the Problem

In history, the concept of burnout was introduced by Freudenberger (1974), and later Maslach and Jackson (1981) developed the Maslach Burnout Inventory to measure the hypothesized aspects of this concept. Since the Maslach Burnout Scale was developed, it has been used in research in various fields to reveal the effects of burnout on the life of individuals. Maslach and Jackson (1981) and Maslach and Goldberg (1998) divided burnout into sub-scales, describing it as a three-component psychological syndrome consisting of emotional exhaustion, depersonalization, and reduced personal accomplishment.

In the following years, burnout was adapted to the sports environment and redefined by Raedeke (1997) as a syndrome with three basic dimensions: emotional/physical exhaustion, reduced athletic accomplishment, and sport devaluation. Athletes experiencing burnout first report a depletion of emotional and physical energy due to the high demands of training and matches. Then, they perceive a lower sense of achievement because they often fail to meet their goals and it seems difficult to achieve desired results. Finally, they begin to devalue sports. It can be stated that as athletes' interest in sports decreases, their sensitivity to their performance also decreases (Raedeke, 1997). Brenner (2007) argued that burnout in athletes usually occurs due to the loss of endurance and continued fatigue caused by excessive effort. From this argument, it can be deduced that ice hockey players are prone to burnout due to the effort required by this sports activity. Gould et al. (1996a) suggested two types of burnout: In the first, athletes abandon sports completely while in the second, they continue these activities at a lower level than their previous performance.

1.3 Describe Relevant Scholarship

A prominent factor for an athlete to perform at an optimum level is mental endurance, which can be considered as a quality that combines various human characteristics and allows an athlete to constantly make the most of his/her physical abilities. Mental endurance in athletes is a collection of values, attitudes, emotions and behaviors that enable them to overcome obstacles, distress or pressure to which they are exposed, as well as helping them maintain their concentration and motivation to reach their goals consistently. It is suggested that mental endurance required by these attitudes protects athletes from burnout (Gucciardi and Gordon, 2009; Madigan and Nicholls, 2017).

A previously unidentified new type of coronavirus, which was determined as the cause of several pneumonia cases in late 2019 in Wuhan, China, was declared a 'pandemic' by WHO in March 2020. The disease, known as coronavirus disease 2019 (COVID-19), has been responsible for infecting millions of cases and resulting in deaths worldwide due to its rapid spread (Lu et al., 2020).

One of the sports branches affected by the COVID-19 pandemic is undoubtedly ice hockey. The postponement/cancellation of international leagues and organizations by relevant authorities with the onset of the COVID-19 pandemic has also affected local organizations and brought about many changes with it (Kurudirek, 2021).

The under-18 (U18) women's national ice hockey team of Turkey, which won the silver medal in its division in Mexico in 2020 (TBHF, 2020), was not able to perform in the U18 Women's Ice Hockey World Championship Division 2 Group B matches planned to be held in Kocaeli/Turkey from 28 to 31 January 2021 due to the cancellation announced on September 17, 2020 (IIHF, 2020). The International Ice Hockey Federation (IIHF) canceled a total of 28 world championship organizations to be held in the 2020-2021 season including the top-division Men's World Championship, U20 Men's World Championship, U18 Men's World Championship, and U18 Women's World Championship (IIHF, 2021). Interestingly, despite the cancellation of U18 Women's Ice Hockey World Championship planned to be held in Sweden from 5 to 12 January 2021, in the same season, the U20 Men's Ice Hockey World Championship was held from December 25, 2020, to January 5, 2021, without any cancellation.

1.4 State Hypotheses and Their Correspondence to Research Design

As for the 2022 season, on December 24, 2021, IIHF announced that all the January 2022 tournaments were cancelled (IIHF, 2021). This announcement, made only 15 days before the closest event, undoubtedly reached many countries while in the pre-tournament training camp. Of the seven world championship organizations to be held in January 2022, five are U18 women's and two were U20 men's organizations. The cancellation of the U18 women's ice hockey world championship organizations for two consecutive years is important in terms of determining the associated burnout caused by this situation in athletes.

This study aimed to determine the athletic burnout of the U18 women's ice hockey national team players and examine their burnout levels in terms of age, education level, sports history, training frequency, inability to participate in a match due to COVID-19, and history of injury.

2. Method

A questionnaire consisting of two parts was used as a data collection tool in the research. The first part of the questionnaire included a personal information form prepared by the researcher to determine the participants' age, education level, sports history, training frequency, inability to participate in matches due to COVID-19, and history of injury. In the second part of the questionnaire, the Athlete Burnout Questionnaire, which was developed by Raedke and Smith in 2001 and adapted into Turkish by Kelecek et al. in 2016, was administered to measure the athletic burnout levels of the participants. This questionnaire contains a total of 13 items under three dimensions, namely emotional/physical exhaustion, reduced athletic accomplishment, and sport devaluation. The Cronbach alpha coefficient of this five-point Likert-type scale was determined as .874.

2.1 Study Population and Sample

The research population consisted of the Turkish U18 women's ice hockey national team players. The sample group comprised 27 athletes randomly selected from the target population based on voluntariness to participate in the research.

2.2 Data Collection Tools

A questionnaire consisting of two parts was used as a data collection tool in the research. The first part of the questionnaire included a personal information form prepared by the researcher to determine the participants' age, education level, sports history, training frequency, inability to participate in matches due to COVID-19, and history of injury. In the second part of the questionnaire, the Athlete Burnout Questionnaire, which was developed by Raedke and Smith in 2001 and adapted into Turkish by Kelecek et al. in 2016, was administered to measure the athletic burnout levels of the participants. This questionnaire contains a total of 13 items under three dimensions, namely emotional/physical exhaustion, reduced athletic accomplishment, and sport devaluation. The Cronbach alpha coefficient of this five-point Likert-type scale was determined as .874.

2.3 Statistical Analysis

SPSS v. 20 software package was used to analyze the data. After the data collected with the data collection tool were transferred to the electronic environment, first the normality test was carried out. Upon determining the data did not show a normal distribution, non-parametric analyses were undertaken. Accordingly, the Mann-Whitney U test was used to compare two-group variables related to the demographic characteristics of the participants, such as descriptive statistics, education level, and disability history, while the Kruskal Wallis H test was used to compare variables with more than two groups; e.g., age, sports history, training frequency, and inability to participate in matches due to COVID-19.

3. Results

Most of the participants had a high school education level, did not have a history of disability for more than three months, and were 18 years old. It was also determined that most had a sports history of for four to five years and engaged in weekly training of three or 10 hours. When the distribution of the participants according to the number of matches they missed due to COVID-19 was examined, it was observed that the groups had an equal distribution (Table 1).

Table 1: Demographic Variables of the Participants

		n	%
Education level	High school	17	63
	University	10	37
History of disability (longer than three months)	Present	9	33.3
	Absent	18	66.7
Age (years)	16	6	22.2
	17	6	22.6
	18	15	55.6
Sports history (years)	4-5	12	44.4
	6-7	9	33.3
	8+	6	22.2
Length of weekly training (hours)	3	9	33.3
	5	6	22.2
	10	9	33.3
	12	3	11.1
Missed matches due to COVID-19 (number)	1-5	9	33.3
	6-10	9	33.3
	11+	9	33.3
Total		27	100

The participants' total mean score in the Athlete Burnout Questionnaire indicated that their burnout levels were generally low. When examined according to the dimensions of the questionnaire, it was determined that the participants had a low score in emotional/physical exhaustion, moderate score in reduced athletic accomplishment, and low score in sport devaluation (Table 2).

Table 2: Participants' Mean Scores in the Athlete Burnout Questionnaire

	n	**Min**	**Max**	**X ± SD**
Emotional/physical exhaustion	27	1.2	4.46	2.4 ± .796
Reduced athletic accomplishment	**27**	2.25	4.8	3.19 ± .847
Sport devaluation	**27**	1	4.75	1.97 ± 1.056
Total	**27**	1.69	4.46	2.46 ± .789

No statistically significant difference was found in the mean ranks of the total and dimension scores of the Athlete Burnout Questionnaire according to the education level of the participants. However, it was observed that the participants with university education had a higher mean rank than those with high school education in relation to the emotional/physical exhaustion and sport devaluation dimensions while the latter had a higher mean rank in reduced athletic achievement dimension compared to the former (Table 3).

Table 3: Comparison of the Participants' Mean Scores in the Athlete Burnout Questionnaire According to their Educational Level

Factor	Variable (education)	n	Mean rank	Sum of ranks	U	Z	P
Emotional/physical exhaustion	**High school**	17	13.29	226	73	-.608	.543
	University	10	15.20	152			
Reduced athletic accomplishment	**High school**	17	15.24	259	64	-1.069	.285
	University	10	11.90	119			
Sport devaluation	**High school**	17	12.76	217	64	-1.107	.268
	University	10	16.10	161			
Total	**High school**	17	14.35	244	79	-.303	.762
	University	10	13.40	134			

A statistically significant difference was found in the mean ranks of the total and dimension scores of the scale according to the presence of a history of disability lasting longer than three months. According to the result, for the total scale and all its dimensions, the participants with a history of disability lasting longer than three months had statistically significantly higher mean ranks compared to those without a disability history (Table 4).

Table 4: Comparison of the Participants' Mean Scores in the Athlete Burnout Questionnaire According to the History of Long-Term Disability

Factor	Variable (history of disability)	n	Mean rank	Sum of ranks	U	Z	P
Emotional/physical exhaustion	**Present**	**9**	22.50	202.50	4.500	-3.973	.000
	Absent	**18**	9.75	175.50			
Reduced athletic accomplishment	**Present**	**9**	18.50	166.50	40.500	-2.112	.035
	Absent	**18**	11.75	211.50			
Sport devaluation	**Present**	**9**	21.50	193.50	13.500	-3.646	.000
	Absent	**18**	10.25	184.50			
Total	**Present**	**9**	22.00	198.00	9.000	-3.724	.000
	Absent	**18**	10.00	180.00			

When examined according to age, the 16-year-old participants had a statistically significantly higher mean rank than the 17-year-old participants in relation to the total scale and the reduced athletic accomplishment dimension (Table 5).

Table 5: Comparison of the Participants' Mean Scores in the Athlete Burnout Questionnaire According to Age

Factor	Variable (age)	n	Mean rank	SD	X^2	p	Difference
Emotional/physical exhaustion	**16**	6	17.00	2	4.719	.094	
	17	6	8.00				
	18	15	15.20				
Reduced athletic accomplishment	**16**	6	22.25	2	8.626	.013*	1 < 2
	17	6	11.00				
	18	15	11.90				
Sport devaluation	**16**	6	12.50	2	2.872	238	
	17	6	10.25				
	18	15	16.10				
Total	**16**	6	21.50	2	8.970	.011*	1 < 2
	17	6	8.00				
	18	15	13.40				

Concerning the evaluation made according to the length of sports history of the participants, those who had been involved in sports for four to five years and six to seven years had statistically significantly higher mean ranks in the reduced athletic accomplishment dimension than the group with more than eight years' sports history. In addition, the participants with a sports history of six to seven years had a statistically significantly higher mean rank in the sport devaluation dimension and total scale compared to those with more than eight years' sports history (Table 6).

Table 6: Comparison of the Participants' Mean Scores in the Athlete Burnout Questionnaire According to Sports History

Factor	Variable (sports history)	n	Mean rank	SD	X^2	p	Difference
Emotional/physical exhaustion	**4-5**	12	12.13	2	5.690	.058	-
	6-7	9	19.00				
	8+	6	10.25				
Reduced athletic accomplishment	**4-5**	12	16.63	2	13.946	.001*	3 < 1, 2
	6-7	9	17.50				
	8+	6	3.50				
Sport devaluation	**4-5**	12	9.50	2	13.650	.001	1 < 2
	6-7	9	21.50				
	8+	6	11.75				
Total	**4-5**	12	14.00	2	9.028	.011*	3 < 2
	6-7	9	19.00				
	8+	6	6.50				

Another statistically significant difference was observed according to the weekly training durations of the participants. The participants who trained for five hours a week had a statistically significantly lower mean rank in the emotional/physical burnout dimension than those who trained for 10 hours a week (Table 7).

Table 7: Comparison of the Participants' Mean Scores in the Athlete Burnout Questionnaire According to the Length of Weekly Training

Factor	Variable (weekly training hours)	n	Mean rank	SD	X^2	p	Difference
Emotional/physical exhaustion	**3**	9	12.00	3	11.434	.010*	2 < 3
	5	6	6.50				
	10	9	19.50				
	12	3	18.50				
Reduced athletic accomplishment	**3**	9	12.50	3	.532	.912	-
	5	6	14.75				
	10	9	15.00				
	12	3	14.00				
Sport devaluation	**3**	9	18.00	3	5.692	.128	-
	5	6	8.75				
	10	9	13.00				
	12	3	15.50				
Total	**3**	9	12.00	3	3.178	.365	-
	5	6	11.00				
	10	9	17.00				
	12	3	17.00				

Lastly, statistically significant differences were found between the groups in terms of the mean ranks of the total scale and emotional/physical exhaustion dimension according to the number of matches missed due to COVID-19. The participants who missed six to 10 matches due to COVID-19 had a statistically significantly lower mean rank in the emotional/physical exhaustion dimension than those that missed one to five or more than 11 matches, and the participants who missed one to five matches due to COVID-19 had a statistically significantly higher mean rank in the total scale compared to those that missed six to 10 matches (Table 8).

Table 8. Comparison of the Participants' Mean Scores in the Athlete Burnout Questionnaire According to Missed Matches due to COVID-19

Factor	Variable (missed matches due to COVID-19)	n	Mean rank	SD	X^2	p	Difference
Emotional/physical exhaustion	**1-5**	9	18.50	2	14.056	.001*	2 < 1, 3
	6-10	9	6.00				
	11+	9	17.50				
Reduced athletic accomplishment	**1-5**	9	17.00	2	1.983	.371	-
	6-10	9	12.50				
	11+	9	12.50				
Sport devaluation	**1-5**	9	14.50	2	2.442	.295	-
	6-10	9	11.00				
	11+	9	16.50				
Total	**1-5**	9	18.00	2	6.067	.048*	1 < 2
	6-10	9	9.00				
	11+	9	15.00				

4. Discussion

Gould et al. (1996a,b; 1997) listed factors causing athletic burnout as injury, overtraining, feeling tired all the time, lack of physical development, irregular performance, losing matches, constant traveling, limited time spent with friends and social environment, believing that one's life is dominated by sports, family and environment pressure, negative team atmosphere, rival teams cheating to win, not enjoying sports, urge to please others, need to feel valuable, and expectation of winning. This is in agreement with the findings of our study revealing that the participants who had a history of disability lasting for more than three months had a statistically significantly higher mean rank in the Athletic Burnout Questionnaire than those without this history.

It is estimated that 6% to 11% of athletes suffer from high levels of burnout (Raedeke, 1997; Eklund and Cresswell, 2007). In athletes, burnout is associated with many negative consequences, such as reduced motivation and decreased performance, which ultimately leads to quitting sports (Gustafsson et al. 2017). In the current study, the burnout status of the participants can be explained by the cancellation of all their official international matches for the last two seasons and most players not being able to play in the U18 category again due to the age limit despite their achievement in having won the silver medal in the last official organization. Taking part in national teams may cause high-level athletes to bear a more stressful process and burden them with more responsibility for national success (Çelebi, 2020). Similarly, it can be stated that world championship organizations, which were planned to be held in Turkey but were canceled twice in a row, have further increased the stress levels of national athletes. It is also observed that due to the cancellation of tournaments in the international arena, some national ice hockey events have been organized for young athletes to gain match experience by taking certain preventive measures, and this has positively affected the motivation of athletes who compete in certain age categories (U20 and U18).

IIHF continues to hold some events in environments where strict measures are taken, called 'bubbles'. This means that players, coaches, officials, and other personnel in the bubble cannot leave the safe zone, which includes the hotel, arena, and close-knit training ground, and in most cases, they do not even have to move to another building. Participants in the hotel are limited to their team's floor, with meeting rooms and dining rooms being allocated to the team. If someone leaves the safe zone, including the hospital, they cannot return to the bubble and can no longer participate in the event (IIHF, 2020).

In this study, the high mean rank of the burnout status of the athletes can be explained by their inability to participate in international matches due to the cancellation of seven organizations, of which five were for women's teams, as announced by the international ice hockey federation, despite the continuation of U20 Men's Ice Hockey World Championship. This finding of our research is in line with Maslach and Leiter (1997) reporting that underwork causes as much stress in individuals as overwork.

In light of all the results obtained from the study, we consider that support should be provided by sports psychologists to ensure the continuation of ice hockey activities of young athletes in developing countries, such as Turkey and to eliminate or reduce burnout among these individuals. A similar study can be undertaken with U18 and U20 male ice hockey athletes and sports branches that have been affected by the cancellation of international organizations due to the ongoing pandemic.

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