



RESEARCH ARTICLE

Examination Of Flow Experience And Enjoyment Levels Of Physical Activity In Dart Playing Youth In Terms Of Some Variables

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ABSTRACT

The aim of this study was to examine the changes in the level of flow experience during the activity and the level of enjoyment of physical activity in terms of some variables in young people aged 9-18 years who actively play darts in junior, senior and senior categories. In this direction, young individuals between the ages of 9 and 18 who received education at different levels participated in the study. The data were collected face-to-face through questionnaires from the athletes participating in the 4th Leg of Turkey Darts Martyr Eren Bülbül Ranking Tournament. The data were collected on March 01-02-03, 2024 at Ankara Yenimahalle Sports Complex Darts Hall. Physical Activity Enjoyment Scale (PACES) and Alpak Flow Scale scales were used as data collection tools. Since the data were determined to be normally distributed, parametric tests were applied. According to the findings, young people who play darts enjoy physical activities at a high level and experience flow at an average level. While gender and age variables do not significantly affect these experiences, education level makes a difference in the level of enjoyment of physical activities. Darts playing experience has a significant effect especially on the flow experience, while it does not make a significant difference in other psychological and physical dimensions. Darts playing categories do not have a significant effect on flow, familiarization, boredom and anxiety levels in general. Accordingly, it can be said that young people who play darts enjoy physical activities highly, gender and age do not affect this enjoyment, education level is determinative, but the experience and category of playing darts do not make a significant difference in psychological and physical dimensions in general, except for the flow experience

INTRODUCTION

Physical activity is a bodily movement produced by individuals' skeletal muscles that results in some form of energy expenditure (Berlin et al., 2006; Oztas, & Vural, 2023). However, being physically active plays a critical role in maintaining and improving physical and mental Health (Çakiroğlu, 2022; Yarımkaaya et al., 2022). Nowadays, young people's participation in sports and recreational activities is of great importance for both their individual health and social interactions. It is known that the interaction of children and young people with sports contributes not only to their physical development but also to their psychological and social development (Isık & Ozer, 2022; Akdağ & Türkmen, 2023). It is possible to find results regarding this benefit in many studies in the literature (Sarıakçalı et al., 2020; Sarıakçalı et al., 2021; Sarıakçalı et al., 2022). It is possible to come across studies that conclude that participation and encouragement in physical activity protects mental health, improves physical self and self-esteem, and helps better physical performance, especially in children and young people (White et al., 2017; Biddle et al., 2019; Rodriguez-Ayllon et al., 2019; Maynou et al., 2021; Akgül and Türkmen, 2023). In this direction, the participation of young people,

especially in adolescence, in regular physical activity is of great importance for the acquisition and maintenance of healthy living habits. With these characteristics, participation in various sports branches of physical activity is recommended for people of all age groups (Ayyıldız Durhan *et al.*, 2017; Karadeniz *et al.*, 2024). In this context, diversification of physical activity types to attract the interest of young people stands out as an important strategy to increase participation rates (Ceylan *et al.*, 2022; Küçük & Ceylan, 2022).

Darts is a sport that is popular among young people and can be played both recreationally and competitively. The fact that darts is a low-cost and easily accessible sport is another important factor that encourages young people to participate in this activity (Çelik Kayapınar & Mutlu, 2021). In addition to mental skills such as attention, concentration and strategic thinking, hand-eye coordination and fine motor skills also play an important role in darts. In addition, darts help the development of four-process problem-solving skills (Yönel, 2018) and increase attention levels (Türkmen & Yönel, 2021; Varol & Türkmen, 2021). With these features, darts stands out as an activity that supports both mental and physical development.

Flow theory describes a state in which individuals are completely focused on an activity and experience deep pleasure without realizing how time passes (Özdemir and Ayyıldız Durhan, 2020). This theory, proposed by Mihaly Csikszentmihalyi (1975), has been frequently studied in the context of sports and physical activities. Flow experience refers to the intense sense of concentration, control and enjoyment that individuals feel while performing an activity (Özdemir *et al.*, 2020). This experience may increase individuals' interest in physical activities and help them to participate longer and more regularly. Experiencing flow in sports and games not only improves performance, but also strengthens individuals' motivation and commitment. Flow is a state of joy, creativity and full participation in life and promotes optimal human functioning and performance in a variety of activities and contexts (Carter *et al.*, 2013). Further research is needed to understand the benefits of flow in elite sports and physical activities, especially for young athletes.

Athletes experience the state of flow through autotelic experience, full concentration on the task, the merging of action and awareness, and the paradox of control during their performance in their sport (Jackson, 1996). In the game of darts, the flow experience allows players to fully immerse themselves in the game and perform excellently. It is thought that flow experience can increase young people's interest in and enjoyment of physical activities. Flow in youth sport, physical activity and physical education can provide widespread benefits for young participants, but more research is needed to explain its occurrence and develop interventions that reliably induce flow states (Jackman *et al.*, 2020). In this context, it is important to determine whether young people who play darts experience flow and its impact on their enjoyment of physical activity.

This study aims to reveal the detailed changes in the flow experience and enjoyment levels of physical activity in young people who play darts within the framework of some variables. In this direction, the aim of this study is to examine the flow experience and enjoyment levels of physical activity in terms of some variables in young people playing darts. The study was designed to determine whether young people have a flow experience while playing darts and their level of enjoyment of physical activity while playing darts. The study aims to contribute to the development of strategies to increase young people's interest in physical activities. In particular, identifying the factors that encourage young people to regularly participate in physical activities may help to develop long-term healthy living habits.

METHOD

Research Model

In the study, the data were collected using the relational survey model by utilizing quantitative research methods. While describing the relational survey model, Karasar (2007) stated that it

enables to determine the existence and/or degree of change between two or more variables together. In this direction, the relationship between dependent and independent variables will be examined in accordance with the purpose of the study.

Research Group

Young people between the ages of 9 and 18 playing darts from different categories and educational levels participated in the study. The majority of the participants were male (54.8%) and between the ages of 11-14 (50.0%). The majority of the participants received high school education (46.3%). The majority of the participants have been playing darts for 1 year (39.7%) and mostly in the stars category (49.3%) (Table 1).

Data Collection

The data were collected face-to-face through questionnaires from the athletes who participated in the 4th Leg of Turkey Darts Martyr Eren Bülbül Ranking Tournament. The data were collected on March 01-02-03, 2024 at Ankara Yenimahalle Sports Complex Darts Hall.

Data Collection Tools

The questionnaires used as data collection tools consist of 3 parts. The first section includes the demographic information form created by the researchers to obtain information about the participants, the second section includes the "Physical Activity Enjoyment Scale (PACES)" Scale adapted into Turkish by Özkurt, Küçükbiş, and Eskiler (2022), and the last section includes the Alpak Flow Scale developed by Ak and Akpullu (2020).

Physical Activity Enjoyment Scale (PACES)

Developed by Mullen et al. (2011) and adapted into Turkish by Özkurt, Küçükbiş, and Eskiler (2022), the "Physical Activity Enjoyment Scale (PACES)" Scale is an 8-question, single-dimensional scale that evaluates positive emotions such as expected or perceived pleasure and pleasure from physical activities. In the original study, the internal consistency coefficient of the scale was found to be .93. A high mean score on the scale indicates a high level of enjoyment of physical activities, while a low mean score on the scale indicates a low level of enjoyment of physical activities.

Alpak Flow Scale

Alpak Flow Scale developed by Ak and Akpullu (2020) consists of 20 questions and 4 sub-dimensions (familiarization, boredom, anxiety and flow). In the original study of the scale, the internal consistency coefficient for the total scores was .80 and for the sub-dimensions were .65, .78, .87 and .79, respectively. The first of the four main dimensions in the scale is the "acquaintance" dimension, which enables the individual to learn about the activity, to be curious and to question whether the individual can do this activity. The second dimension is the "boredom" dimension, in which the individual overcomes the actions in the activity by exhibiting his/her skills and loses interest in the activity in the familiarization dimension by performing these actions easily with his/her existing skills. The third dimension is the "anxiety" dimension, which arises from the concern of not being able to perform the actions that occur in the individual as the actions in the activity become more complex. The fourth dimension is the "flow" dimension, which is formed as a result of the individual performing the activity actions by showing a certain example of willpower.

Data Analysis

In the analysis of the data, frequency and percentage from descriptive statistics methods will be used for personal information. In order to test whether all three scales and their sub-dimensions are normally distributed, kurtosis and skewness values will be examined and it will be determined whether the data are normally distributed according to the significance level, and parametric tests

(independent sample t-test, one-way analysis of variance ANOVA) will be applied if they are normally distributed. If the data are not normally distributed, nonparametric tests will be used.

FINDINGS

Table 1. Findings on the percentage and frequency values of the demographic information of the participants

Variable	Category	f	%
Gender	Male	149	54,8
	Female	123	45,2
Age	9-10	54	19,9
	11-14	136	50,0
	15-18	82	30,1
Education Level	Elementary School	38	14,0
	Middle School	108	39,7
	High School	126	46,3
Darts Playing Experience (Years)	1 Year	108	39,7
	2 Years	86	31,6
	3 Years and Above	78	28,7
Darts Playing Category	Juniors	63	23,2
	Stars	134	49,3
	Youth	75	27,6

Table 2. Findings on the minimum, maximum, mean, standard deviation, skewness and kurtosis values obtained from the measurement tools according to the answers given by the participants and the internal consistency values of the measurement tools according to the answers given

Scale Dimensions	Min.	Max.	\bar{x}	S.	Skewness	Kurtosis	α
PACES	4,38	7,00	6,46	0,62	-1,077	0,354	0,910
Alpak Flow Scale	2,95	5,00	4,23	0,41	-0,774	0,459	0,858
Acquaintance	3,00	5,00	4,31	0,55	-0,886	0,107	0,890
Boredom	2,60	5,00	4,30	0,56	-0,902	0,140	0,894
Anxiety	3,00	5,00	4,31	0,56	-0,862	-0,008	0,894
Flow	1,00	5,00	3,99	0,93	-1,895	3,323	0,927

Table 2 shows the minimum, maximum, mean, standard deviation, skewness and kurtosis and internal reliability values of the scales according to the participants' responses to the measurement tools. According to the results obtained from these findings, it can be said that the participants enjoy darts activities at high levels according to their responses to the PACES, while they experience flow at high levels according to their responses to the Alpak Flow Scale. In addition, according to the

participants' responses to the measurement tools, it was determined that the measurement tools showed a normal distribution.

Table 3. Independent sample t-test findings between gender variable and measurement tools

Scale Dimensions	Gender	n	\bar{x}	S.	t	p
PACES	Male	149	6,48	0,62	0,525	,981
	Female	123	6,44	0,63		
Alpak Flow Scale	Male	149	4,23	0,40	0,257	,683
	Female	123	4,22	0,42		
Acquaintance	Male	149	4,31	0,55	0,107	,967
	Female	123	4,31	0,55		
Boredom	Male	149	4,30	0,58	0,076	,587
	Female	123	4,30	0,55		
Anxiety	Male	149	4,31	0,56	0,104	,517
	Female	123	4,31	0,57		
Flow	Male	149	4,00	0,89	0,278	,267
	Female	123	3,97	0,99		

According to the results obtained from the independent sample t-test findings between gender and measurement tools in Table 3, it was determined that the gender variable did not significantly differentiate the levels of Enjoyment of Physical Activities and ALPAK Flow scales of young people playing darts.

Table 4. Results of one-way analysis of variance ANOVA test between age variable and measurement tools

Scale Dimensions	Age	n	\bar{x}	S.	F	p
PACES	9-11	54	6,57	0,73	1,491	,227
	12-15	136	6,40	0,60		
	16-18	82	6,48	0,59		
Alpak Flow Scale	9-11	54	4,25	0,41	0,145	,865
	12-15	136	4,23	0,40		
	16-18	82	4,21	0,41		
Acquaintance	9-11	54	4,34	0,58	0,245	,783
	12-15	136	4,32	0,52		
	16-18	82	4,28	0,58		
Boredom	9-11	54	4,34	0,61	0,245	,783
	12-15	136	4,31	0,53		
	16-18	82	4,25	0,59		

Anxiety	9-11	54	4,28	0,62	1,170	,312
	12-15	136	4,36	0,53		
	16-18	82	4,25	0,58		
Flow	9-11	54	4,04	0,85	0,617	,541
	12-15	136	3,93	1,05		
	16-18	82	4,06	0,77		

Table 4 shows the findings of the one-way analysis of variance ANOVA test on the differentiation of age variables on the measurement tools according to the answers given by the participants. According to the results obtained, it was determined that the age variable did not significantly differentiate the levels of PACES and Alpak Flow scales. Although no significant differences were detected, it can be said that the levels of enjoyment of physical activities and flow increase as age decreases.

Table 5. One-way analysis of variance ANOVA test findings between school type variable and measurement tools

Scale Dimensions	Education Status	n	\bar{x}	S.	F	p	LSD
PACES	Elementary School ¹	38	6,55	0,70	5,462	,005*	3>1>2
	Middle School ²	108	6,31	0,66			
	High School ³	126	6,56	0,54			
Alpak Flow Scale	Elementary School	38	4,26	0,32	0,350	,705	
	Middle School	108	4,20	0,43			
	High School	126	4,24	0,41			
Acquaintance	Elementary School	38	4,39	0,47	0,592	,554	
	Middle School	108	4,28	0,54			
	High School	126	4,32	0,59			
Boredom	Elementary School	38	4,36	0,46	0,614	,542	
	Middle School	108	4,25	0,58			
	High School	126	4,32	0,58			
Anxiety	Elementary School	38	4,35	0,49	0,254	,776	
	Middle School	108	4,33	0,58			
	High School	126	4,29	0,57			
Flow	Elementary School	38	3,96	1,14	0,181	,835	
	Middle School	108	3,96	1,00			
	High School	126	4,03	0,80			

*p<.05

According to the findings of the one-way analysis of variance ANOVA test between the education level variable and the measurement tools in Table 5, the education level variable significantly differentiates the PACES. Significant differences within this group were found to be in favor of participants with high school education among all factors. On the other hand, the education level variable does not significantly differentiate the Alpak Flow Scale. Although significant differences were not detected, it can be said that the Alpak Flow levels of the participants with primary school education are higher than the participants with other levels of education.

Table 6. One-way analysis of variance ANOVA test findings between the darts playing experience (years) variable and measurement tools

Scale Dimensions	Darts Playing Experience	n	\bar{x}	S.	F	p	LSD
PACES	1 Year	108	6,43	0,70	0,276	,759	
	2 Years	86	6,47	0,59			
	3 Years and Above	78	6,50	0,55			
Alpak Flow Scale	1 Year ¹	108	4,26	0,40	3,121	,046*	2<1<3
	2 Years ²	86	4,28	0,36			
	3 Years and Above ³	78	4,13	0,44			
Acquaintance	1 Year	108	4,36	0,51	0,629	,534	
	2 Years	86	4,28	0,56			
	3 Years and Above	78	4,28	0,60			
Boredom	1 Year	108	4,35	0,53	0,646	,525	
	2 Years	86	4,26	0,57			
	3 Years and Above	78	4,27	0,61			
Anxiety	1 Year	108	4,29	0,57	2,360	,096	
	2 Years	86	4,42	0,51			
	3 Years and Above	78	4,23	0,60			
Flow	1 Year ¹	108	4,03	0,89	4,317	,014*	2<1<3
	2 Years ²	86	4,16	0,80			
	3 Years and Above ³	78	3,74	1,07			

*p<.05

Table 6 presents the findings of the one-way ANOVA test examining the relationship between darts playing experience (years) and various scale dimensions. In the PACES, no significant difference was found between the groups with different darts playing experience. This shows that the level of enjoyment of physical activities does not vary according to experience. In the Alpak Scale dimensions, significant differences were found between the experience groups in the "Flow" dimension. Especially the flow levels of those with 2 years of experience were found to be higher than those with 1 year of experience. However, no significant differences were found between the experience groups in the dimensions of "Acquaintance", "Boredom" and "Anxiety". In general, it can be concluded that dart playing experience affects the level of flow, but has no significant effect on other psychological and physical dimensions. These findings suggest that the experience of playing darts may contribute

to certain psychological flow states, but in general, it does not make a significant difference in the levels of enjoyment, familiarization, boredom and anxiety.

Table 7. One-way analysis of variance ANOVA test findings between the dart playing category variable and measurement tools

Scale Dimensions	Darts Playing Category	n	\bar{x}	S.	F	p
PACES	Juniors	63	6,61	0,69	2,416	,091
	Stars	134	6,41	0,59		
	Youth	75	6,43	0,61		
Alpak Flow Scale	Juniors	63	4,25	0,40	0,171	,843
	Stars	134	4,23	0,40		
	Youth	75	4,21	0,43		
Acquaintance	Juniors	63	4,33	0,58	0,158	,854
	Stars	134	4,32	0,52		
	Youth	75	4,28	0,59		
Boredom	Juniors	63	4,29	0,62	0,108	,897
	Stars	134	4,31	0,53		
	Youth	75	4,28	0,58		
Anxiety	Juniors	63	4,33	0,61	0,745	,476
	Stars	134	4,34	0,54		
	Youth	75	4,24	0,58		
Flow	Juniors	63	4,06	0,82	0,555	,575
	Stars	134	3,93	1,03		
	Youth	75	4,04	0,83		

Table 7 presents the findings of the one-way ANOVA test examining the relationship between dart playing category and various scale dimensions. In the PACES, no significant difference was found between the groups with different dart playing categories. This shows that the level of enjoyment of physical activities does not vary according to dart playing categories. In the Alpak Flow Scale dimensions, no significant differences were found between the experience groups in the "Flow" dimension. There was no statistically significant difference between the flow levels of the Minors, Stars and Juniors groups. However, similarly, no significant differences were found between the experience groups in the dimensions of "Acquaintance", "Boredom" and "Anxiety". In general, it can be concluded that the category of darts playing (Minis, Stars, Juniors) does not have a significant effect on flow, acquaintance, boredom and anxiety levels. These findings suggest that the category of darts playing does not contribute to specific psychological states, but in general does not make a significant difference in the levels of enjoyment of physical activities, familiarization, boredom and anxiety.

DISCUSSION

The results obtained from the current study, which investigated the effect of flow experience levels during the activity on the level of enjoyment of physical activity in young people aged 9-18 years who actively play darts in the junior, senior and senior categories, will be discussed in this section. According to the answers given by the participants in the study, it was concluded that they had high average scores on the PACES and average scores on the Alpak Flow Scale. Accordingly, it can be said that the participants enjoyed the dart activity and had an average level of flow experience. It is possible to find studies in the literature that support the current study. According to the results of the study conducted by Öztürk and Küçükibiş (2020), high school and university students have high levels of enjoyment of physical activities. Likewise, according to the results of the study conducted by Dereceli *et al.* (2023), the level of enjoyment of physical activities of health vocational school students has parallel results with the current study. On the other hand, in the studies conducted by Yapıcı *et al.* (2022) and Dilmaç (2023), they reached results that overlap with the current research with high levels of averages from the Alpak Flow Scale.

In the present study, the gender variable was tested by using independent sample t-test analysis on the enjoyment of physical activity and flow levels of young athletes playing darts. According to the results obtained from this test, gender variable does not significantly differentiate the levels of Enjoyment of Physical Activities and ALPAK Flow scales. In other words, there is no significant difference between male and female participants in these scales. It is possible to reach results supporting the current study in the literature (Öztürk & Küçükibiş, 2020; Korner, 2021; Dereceli *et al.*, 2023; Peker *et al.*, 2023; Dereceli *et al.*, 2024). In addition, there are also studies in the literature that obtained results contrary to the current study (Yapıcı *et al.*, 2022; Dilmaç, 2023).

According to the results obtained from the one-way analysis of variance ANOVA test findings to examine the effect of age variable, the age variable does not significantly differentiate the levels of Enjoyment of Physical Activities and ALPAK Flow scales. It is possible to find studies in the literature that support the current study (Korner, 2021; Dereceli *et al.*, 2023; Dereceli *et al.*, 2024). Although no significant differences were detected, it was observed that the levels of enjoyment of physical activities and flow increased as age decreased.

In the test conducted to determine the relationship between the education level variable and the measurement tools, it was determined that the level of education significantly differentiated the Scale of Enjoyment of Physical Activities. These significant differences were found between the variables of primary school, secondary school and high school education in favor of the participants with high school education. On the other hand, education level does not significantly differentiate the ALPAK Flow Scale. Although the ALPAK Flow levels of the participants who received primary school education were higher than the participants who received education at other levels, this difference was not significant. When the literature was examined, it was seen that there are studies that reached parallel results with the current study (Öztürk & Küçükibiş, 2020; Dilmaç, 2023).

No significant difference was found in the Enjoyment of Physical Activities Scale according to the experience of playing darts, which shows that the level of enjoyment of physical activities does not vary according to experience. On the other hand, significant differences were found between experience groups in the "Flow" dimension of the ALPAK Flow Scale, and it was found that the flow levels of those with 2 years of experience were higher than those with 1 year of experience. However, no significant differences were found between the experience groups in the dimensions of "Acquaintance", "Boredom" and "Anxiety". These results suggest that dart playing experience may increase the flow experience, but it does not have a significant effect on the enjoyment of physical activities, familiarization, boredom and anxiety levels. The fact that the experience of playing darts increased the flow experience in particular suggests that the experience may contribute to individuals experiencing a more intense state of psychological satisfaction and focus from this

activity. According to the results of the study conducted by Dilmaç (2023), contrary to the current study, no significant differences were found between experience duration and Alpak Flow levels.

Finally, the findings obtained from the one-way analysis of variance ANOVA test to determine the relationship between darts playing category and measurement tools will be discussed. In the Enjoyment of Physical Activities Scale, no significant difference was found between the groups with different darts playing categories (Minors, Stars, Juniors). In the "Flow" dimension of the ALPAK Flow Scale, no significant differences were found between the experience groups, and similarly, no significant differences were found between the experience groups in the "Acquaintance", "Boredom" and "Anxiety" dimensions. These results suggest that the category of playing darts does not have a significant effect on the enjoyment of physical activities and the flow experience. Therefore, it can be said that the category of playing darts does not make a significant difference on the enjoyment of this activity and the psychological states experienced by individuals. This suggests that the enjoyment and flow provided by participation in physical activities are shaped by individual experiences and motivations rather than being dependent on a specific category.

CONCLUSION

The current study examined the enjoyment of physical activity and flow experience levels of young people aged 9-18 years who play darts. It was found that the participants achieved high mean scores on the Enjoyment of Physical Activities Scale and average scores on the ALPAK Flow Scale. These results suggest that young people enjoy darts activities and have an average level of flow experience. It was found that variables such as gender, age, dart playing experience and category did not make a significant difference on the enjoyment of physical activities and flow levels. However, the education level variable was found to create significant differences in the level of enjoyment of physical activities. It was concluded that the experience of playing darts increased especially the flow experience, but did not have a significant effect on other psychological and physical dimensions.

RECOMMENDATIONS

For future research, it is important to increase the generalizability of the findings by replication with larger and diverse samples. It may also be useful to compare the relationships between enjoyment of physical activities and flow experience by conducting similar research with different sports and activities. In particular, it is necessary to combine quantitative and qualitative research methods to examine the effects of education level and length of experience in more depth.

In terms of practical applications, it is recommended that darts and similar physical activities be included in education programs to increase young people's flow experiences and enjoyment of physical activities. Increased participation in sports activities should be encouraged for young people with low levels of education to increase their enjoyment of physical activities. Mentoring programs should be established to increase flow experience, especially between beginners and experienced players.

For education and sport managers, it is important to plan sport activities in such a way that each participant can benefit equally, without differentiating by gender, age and category. Considering the effects of educational level on participation in physical activity, sports programs need to be structured in a way that balances differences in educational level. These recommendations offer strategies to enable young people to enjoy physical activity more and increase their flow experience. Future research and practice can contribute to a deeper understanding and wider dissemination of these findings.

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