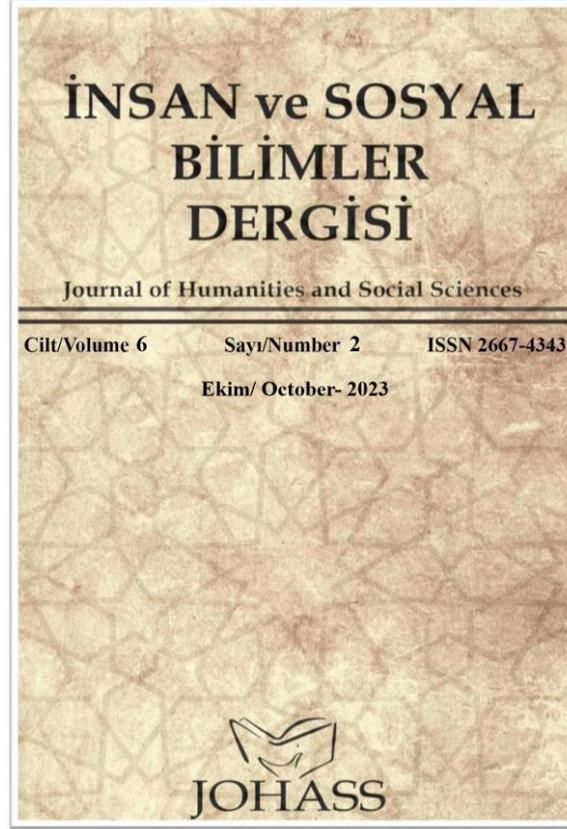


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**Leisure Activity Type and Sustainable Health Status in Late Adolescents**

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## **Leisure Activity Type and Sustainable Health Status in Late Adolescents**

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### **Abstract**

The concept of sustainable health encompasses not solely the holistic physical welfare of individuals, but also their mental wellbeing and their harboring of optimistic outlooks for the future. Integral to this construct is the interplay between the individual and their environment. The primary objective of this study is to examine the association between sustainable health status and leisure activities among adolescents, particularly during the challenging transition period of late adolescence into adulthood. A total of 398 adolescents aged between 18-24 participated in the study. Hierarchical multiple regression analyses were employed to investigate the associations among six distinct categories of leisure activities and three dependent variables (life satisfaction, optimism, and health perception). Upon controlling for covariates, the findings demonstrated significant positive associations between outdoor and social activities and all three outcome variables. Physical activities exhibited positive correlations with health perception and life satisfaction. Moreover, significant positive associations were found between life satisfaction and volunteer activities, optimism and cultural activities, as well as health perception and home-centered activities. These findings indicate that fostering positive social interactions within recreational contexts and promoting engagement in physical activities can be pivotal in fostering sustainable health outcomes among adolescents.

**Keywords:** Adolescent, leisure activity, physical activity, recreation, sustainable health

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## **Introduction**

Adolescence is a special stage that begins with puberty, where growth in body height, hormonal, sexual, social, emotional, personal, and mental changes and developments occur and is thought to end with the end of bodily growth. However, it is a personal process for each individual when this process will begin when it will end, how he will encounter adaptation problems, and how he or she will cope with them. In this process, individuals can be affected by many external factors. It can be said that the measures taken within the scope of COVID-19 have effects on adolescents as an external factor (Panchal et al., 2021; Kauhanen et al., 2023). The COVID-19 pandemic has spurred a surge in scholarly investigations pertaining to several issues, including sedentariness, illnesses associated with physical inactivity, both indoor and outdoor physical exercise, environmental aspects, and public health (Lesser & Nienhuis, 2020; Mitra et al., 2020; Sallis et al., 2020). In light of the pandemic, humanity has swiftly adapted to what is commonly referred to as the "new normal." This state of affairs has brought about a considerable transformation in our way of life, involving obligatory face coverings in public spaces, remote work arrangements, and the virtualization of the educational system. Of particular concern are the effects of these changes on the younger generation, who have been disproportionately affected. Previous studies have highlighted various health issues, such as increased screen time, sedentary lifestyles, and obesity, that are prevalent among adolescents (Guessoum et al., 2020; Pietrabissa et al., 2021; Kim et al., 2022). Officials have warned that this situation has worsened in the aftermath of the pandemic, and it has been emphasized that urgent measures need to be taken to tackle this issue (Brocq et al., 2020). Effective resolution of this problem can be achieved through collaboration among scholars working in relevant fields, as well as local and national governments, and nongovernmental organizations (NGOs). Identifying the factors that promote a sedentary lifestyle among adolescents is of critical importance to promote sustainable health and well-being among this population. For this study, we have opted to use three distinct scales to assess the sustainable health outcomes of adolescents: Health perception (HP), optimism, and life satisfaction (LS). Prior research has demonstrated that these scales can effectively capture and describe overall well-being (Knowles & Behrman, 2005; Ryu & Heo, 2018).

Prioritizing the health of individuals aged 10 to 24, who make up a substantial 24% of the global population, can result in a triple impact by benefiting their current youth, future

adulthood, and subsequent generations (Knowles & Behrman, 2005; Ryu & Heo, 2018). Evidence-based interventions highlight three key elements to address the issue of adolescent physical inactivity on a global scale. Currently, 80% of adolescents are insufficiently active, and a significant number of them spend two or more hours engaging in recreational screen time each day. The three constituents of the adolescent physical activity system that require attention are schools that create a supportive and nurturing environment for physical activity, social and digital environments that encourage engagement in physical activity, and urban environments that provide diverse opportunities for participation in physical activities.

Based on empirical research, three primary components of the adolescent physical activity system have been identified, namely, supportive schools, social and digital media, and multi-purpose urban environments (Ryu & Heo, 2018). However, while research on adolescent physical activity is expanding, there is a noticeable gap in the literature concerning "multi-purpose urban environments." It is crucial to conduct studies to facilitate greater access to such environments and promote increased physical activity engagement among adolescents. Identifying the factors that promote a sedentary lifestyle among adolescents is of critical importance to promoting sustainable health and well-being among this population. Although numerous studies have highlighted the significance of leisure activity among adolescents (Auhuber et al., 2019; Sivan et al., 2019; Allaby & Shannon, 2020), it is worth noting that most of these studies have been conducted in developed regions such as Europe and America (Blasko et al., 2014, Gronow & Southerton, 2010; Yamashita et al., 2019; Pelliccia, et al., 2019).

The investigation of the association between various forms of leisure activities and sustainable health among adolescents in developing or underdeveloped countries carries significant importance. If inequalities exist, it is important to identify their underlying causes and nature. Addressing these questions is particularly relevant to improving the health and well-being of young people in developing countries.

The aim of this research was to provide insights into the questions posed earlier. We acknowledge that cultural differences and varying educational systems may contribute to differences in physical activity behaviors among young people. Therefore, our objective was to investigate specific leisure activities, including outdoor physical activities, hobbies, indoor cultural activities, social activities, and volunteering, and to analyze the relationship with sustainability health (health perception, life satisfaction, and optimism). In this context, the hypotheses of our study are as follows.

1. There is a positive relationship between the leisure activity types preferred by individuals with dispositional optimism, life satisfaction, and health perception.
2. The strong predictors of life satisfaction, dispositional optimism, and health perception are outdoor activities and physical activities.

## **Method**

### **Research Model**

A correlational research model was used in accordance with the purposes of the research. Correlational research model; It is a research model that examines the relationships between variables and the level of these relationships (Kurtuluş, 2004).

### **Research Group**

The study sample consisted of 398 adolescents residing in Ankara, the capital city of Turkey, and was selected using a convenience sampling method. The 398 participants' mean age was 19.9 years ( $SD = 2.41$ ), with 46.7% women. In the pursuit of maximizing the representativeness and diversity of data, a total of twelve different locations in varied regions of Ankara were carefully chosen to participate in this study. In order to ensure a broad range of sociocultural and economic backgrounds, parks from differing areas were selected. The convenience sampling method was used in the study.

### **Data Collection Tools**

Beyers et al., (2020) proposed that diverse types of stimulation (e.g. social, cognitive, and physical) are connected to well-being in adolescents (Beyens et al., 2020). In the present study, it was hypothesized that engaging in diverse leisure activities would elicit positive stimulation. In our study, the indicators of sustainable health contained health perception, dispositional optimism, and life satisfaction. The scales were selected based on their extensive utilization over time and demonstrated relevance to the adolescent population. (Gómez-López et al., 2019; Burešová et al., 2020; Chen et al., 2020; Commodari & La Rosa, 2020; Radez et al., 2021). Life satisfaction was assessed using the Satisfaction with Life Scale (SWLS) (Diener et al., 1985), which consists of five items containing statements such as "I am satisfied with my life" and "In most ways, my life is close to my ideal". Participants responded to the SWLS using a 7 point Likert-type scale, ranging from 1 (strongly disagree)

to 7 (strongly agree). Higher scores on this scale indicated higher levels of life satisfaction. The internal consistency of this measure, assessed by Cronbach's alpha, was found to be 0.832, indicating high reliability. Dispositional optimism (DO) was evaluated using the Life Orientation Test-Revised (Scheier et al., 1994), comprising 10 items that encompass statements like "Overall, I expect more good things to happen to me than bad." Participants provided responses to the Life Orientation Test-Revised (Scheier et al., 1994) using a 5 point Likert-type scale, ranging from 0 (strongly disagree) to 4 (strongly agree). The instrument consisted of three items related to dispositional optimism, three items related to pessimism (reverse-scored), and four filler items that were not included in the analysis. The pessimistic items were summed with the optimistic items to obtain a composite score. The internal consistency of the items within our study sample yielded a modest reliability coefficient (Cronbach's  $\alpha = 0.763$ ).

To assess health perception, a modified version of the health rating question developed by Willits and Crider (1988) was employed (Willits & Crider, 1988). Each participant was asked to rate their overall health by answering the question, "In general, how would you rate your health?". The health perception measure was rated on a 5-point Likert-type scale, ranging from 1 (poor) to 5 (excellent). The single-item measure of subjective health has demonstrated good test-retest reliability. Furthermore, it has exhibited strong correlations with other health measures, thus indicating a high level of construct validity (Streiner et al., 2016).

The frequency of participation in different types of leisure activities was assessed using the modified version of Ragheb's (1980) Leisure Participation Scale, as utilized in the study conducted by Chun et al. (Ragheb, 1980; Chun et al., 2012). The scale was adapted from Ragheb (1980) 's original work and incorporated into Chun et al. (2012) 's study for the purpose of measuring leisure activity engagement.

Six leisure activities types that we used in the current study encompassed the following: (1) physical activities such as exercise and sports; (2) cultural activities and entertainment such as watching television, attending movies, concerts, ballets, and visiting museums; (3) home-centered and social activities such as socializing with friends, dining out, traveling and family time; (4) outdoor activities such as hiking, fishing, and biking; (5) volunteer activities (6) hobbies and indoor activities such as painting, playing a musical instrument and reading. Each leisure activity was assessed on a four-point scale, indicating the frequency of respondents' participation in that particular activity. The scale ranged from 1

(never) to 4 (frequently), with higher scores indicating more frequent engagement in the activity.

### **Statistical Analysis**

The SPSS package program was used to analyze the data. In this context, Pearson correlations were utilized to examine the associations among the study variables. Hierarchical multiple regression analyses were conducted to investigate the predictive relationships between types of leisure activity (predictors) and health perception, life satisfaction, and dispositional optimism (outcome variables). Demographic variables, namely gender and income, were considered potential confounders and included as covariates. In the regression analyses, all covariates were entered in the initial step. Durbin-Watson coefficient values for the regression model, pairwise correlations (pairwise  $r < 0.80$ ), tolerance values ( $1-R^2 > 0.20$ ), variance magnification factor ( $VIF = [1/(1) - R^2] < 10$ ), and the highest condition index value ( $CI < 30$ ) were examined and it was determined that there was no autocorrelation problem between the variables.

### **Compliance with Ethical Standards**

In this research, participants were given detailed information about the aim and content of the study and signed an informed consent form. Ethical approval for this study was obtained from Sakarya University of Applied Sciences (Decision No: E-70562473-050.99-100557) and the research was carried out within the scope of the Council of Higher Education Scientific Research and Publication Ethics Instruction.

## **Findings**

### **Table 1**

*The Results of Correlation Analysis between Dependent and Independent Variables*

Variables	1	2	3	4	5	6	7	8	9	10
1. Gender	1									
2. Income	-0.359**	1								
3. Home-centred and social activities	-0.109	0.181*	1							
4. Volunteer activities	0.049	0.069	0.171*	1						
5. Hobbies and indoor activities	-0.009	0.299**	0.231**	-0.035	1					
6. Cultural activities and entertainment	0.087	0.041	0.181*	0.251**	0.249**	1				
7. Outdoor activities	0.171*	0.069	-0.017	0.379**	0.219**	0.294**	1			
8. Physical activities	-0.032	0.169*	0.191**	0.151*	0.209**	0.029	0.161*	1		
9. Life satisfaction	0.129	0.111	0.057**	0.392**	0.109	0.271**	0.399**	0.221**	1	
10. Dispositional optimism	0.129	0.019	0.059**	0.251**	0.141	0.321**	0.379**	0.023	0.419**	1
11. Health Perception	-0.031	0.089	0.219**	0.198**	0.151*	0.226**	0.292**	0.233**	0.359**	0.279**

\*p<0.05; \*\*p <0.01

The results indicate statistically significant relationships among the following study variables: gender, income, six leisure activities, health perception, dispositional optimism, and life satisfaction, and the largest coefficient was found between life satisfaction and outdoor activities (r=0.399), which implies that engagement in more out-door activities is associated with higher life satisfaction. Life satisfaction was also significantly correlated with cultural activities (r=0.271), volunteer activities (r=0.392), and physical activities (r=0.221). Positive relationships existed between dispositional optimism and outdoor activities (r=0.379), cultural activities (r=0.321), and volunteer activities (r=0.251). Health perception was positively and significantly related to outdoor activities (r=0.292), physical activities (r=0.233), cultural activities (r=0.226), home-centered activities (r=0.219), volunteer activities (r=0.198) and hobbies and indoor activities (r=0.151; Table 1).

**Table 2**

*Hierarchical Regression Analysis of Outcome Variables*

	Life Satisfaction (LS)		Dispositional Optimism (DO)		Health Perception (HP)	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Gender	219** (0.203)	0.121 (0.186)	0.163* (0.093)	0.057 (0.092)	0.041 (0.146)	-0.008 (0.138)
Income	269* (0.109)	0.048 (0.016)	0.099 (0.051)	-0.071 (0.009)	0.199 (0.083)	0.199* (0.058)
Home-centered and social activities		-0.030 (0.070)		0.010 (0.034)		0.201** (0.053)

Volunteer activities	0.251** (0.084)			0.101 (0.040)		0.041 (0.062)
Hobbies and indoor activities	0.012 (0.080)			0.057 (0.039)		0.002 (0.060)
Cultural activities and entertainment	0.128 (0.090)			0.197* (0.044)		0.098 (0.067)
Outdoor activities	0.201* (0.102)			0.274** (0.051)		0.189* (0.073)
Physical activities	0.151* (0.080)			-0.062 (0.038)		0.194**(0.058)
F	3.358*	7.161***	1.413	4.948***	2.208	5.011***
R <sup>2</sup>	0.054	0.271	0.021	0.211	0.036	0.211

Notes: Standardised regression coefficients reported, standard errors in parentheses. \*p<0.05; \*\*p <0.01

In Table 2, three hierarchical multiple regression analyses were performed to examine the unique contribution of leisure activities to the outcomes of LS, DO, and HP. Table 2 displays the associations between the six leisure activities and LS while controlling for income and sex. In Model 1, the variables of income and gender accounted for 5.4% of the variance in LS. ( $R^2=0.054$ ,  $p<0.05$ ). In Model 2, the six leisure activities were included as predictors. Physical activities ( $\beta=0.151$ ,  $p<0.05$ ), outdoor activities ( $\beta=0.201$ ,  $p<0.05$ ), and volunteer activities ( $\beta=0.251$ ,  $p<0.01$ ) emerged as significant predictors of LS. Model 2 explained 27.1% of the variance in LS ( $R^2=0.271$ ,  $p<0.001$ ), indicating a substantial contribution of the six leisure activities. Furthermore, after controlling for gender and income (as shown in Table 2), a significant relationship between two specific leisure activities and DO was observed. In Model 1, gender and income accounted for 2.1% of the variance in DO ( $R^2=0.021$ ). However, in Model 2, after introducing the six leisure activities, cultural activities ( $\beta=0.197$ ,  $p<0.05$ ) and outdoor activities ( $\beta=0.274$ ,  $p<0.01$ ) emerged as significant predictors significantly contributing to DO. Model 2, which included the six leisure activities as predictors, explained 21.0% of the variance in DO ( $R^2=0.211$ ,  $p<0.001$ ). Furthermore, after controlling for gender and income (as indicated in Table 2), significant associations were found between three distinct leisure activities and HP. In Model 1, income and gender collectively accounted for 3.6% of the variance in HP ( $R^2=0.036$ ). However, in Model 2, with the introduction of the six leisure activities, home-centered activities ( $\beta=0.201$ ,  $p<0.01$ ), outdoor activities ( $\beta=0.189$ ,  $p<0.05$ ), and physical activities ( $\beta=0.194$ ,  $p<0.01$ ) emerged as significant predictors significantly contributing to HP. Model 2 explained 21.1% of the variance in HP ( $R^2=0.211$ ,  $p<0.001$ ).

## **Discussion and Results**

This research enhances our comprehension of the correlation between specific categories of recreational pursuits and sustainable well-being during the later stages of adolescence. In general, regular engagement in "outdoor" pursuits, along with "physical" activities, demonstrated an association with the measured sustainable health outcomes in this investigation. Participation in "outdoor activities" exhibited a contributory influence on all three health outcomes, namely health perception, optimism tendency, and life satisfaction, while physical activity emerged as a significant determinant of health perception and life satisfaction among late adolescents.

The findings of our study yield empirical support for the association between engagement in "volunteer," "outdoor," and "physical" activities and life satisfaction. Previous research has documented the notable impact of participation in "volunteer" activities on life satisfaction. Notably, extensive involvement in volunteering endeavors and the maintenance of social activities have demonstrated positive associations with life satisfaction during adolescence (Alfaro-Inzunza et al., 2019; Shenaar-Golan & Goldberg, 2019). While our study did not establish causal relationships, we propose that engagement in volunteering activities could serve as a means to uphold health status and enhance life satisfaction among adolescents.

The notion that increased engagement in "outdoor and physical" activities constitutes a behavior conducive to enhancing the sustainable health status of adolescents has gained widespread acceptance. A study by Mutz, Müller, and Göring supports this premise by indicating that involvement in outdoor activities can contribute to fostering a sense of well-being among adolescents (Mutz et al., 2019). Furthermore, the findings of Jeckson et al.'s research demonstrate that adolescents are more likely to experience heightened levels of well-being, both in terms of mental and physical health, when engaging in outdoor activities during the COVID-19 pandemic. In this context, the results of the present study provide additional support to the existing body of evidence linking participation in outdoor and physical activities with life satisfaction. Based on the existing literature and the findings of this study, we propose that increased life satisfaction can be achieved through engagement in outdoor activities with family and friends, as well as active participation in physical activities.

Participation in cultural and social activities has been identified as a potential means to foster optimism among late adolescents. Research indicates that engaging in cultural events,

such as visiting museums, can positively impact emotional well-being by eliciting feelings of optimism and hope (Wood, 2008). Moreover, individuals who maintain closer social relationships exhibit a higher likelihood of adopting an optimistic outlook on the future (Antonucci, 2023). The findings of our study align with previous research, demonstrating a consistent association between participation in cultural activities and enhanced life satisfaction and overall well-being (Gumus et al., 2017; Soenens & Vansteenkiste, 2020; Queiroz et al., 2020).

In accordance with prior investigations, the present study reinforces the notion that cultural and social activities make a noteworthy contribution to fostering an optimistic disposition among adolescents. While the significance of social connections in sustaining feelings of optimism in adolescents has been extensively evidenced, the influence of cultural activities remains relatively underexplored. Researchers have generally regarded participation in cultural activities, such as visiting exhibitions, shows, and plays, as being of lesser importance to adolescent wellbeing when compared to physical or social activities, which have received more extensive scrutiny. Nevertheless, the findings of the current study lend support to the value of engaging in cultural activities, as they contribute to the cultivation of an optimistic mindset and facilitate the enjoyment of life among adolescents.

To enhance the perception of health, this study recommends that adolescents engage in specific leisure activities encompassing outdoor, social, and physical domains. Notably, the investigation by Jackson et al. (2021) regarding social activities underscores the crucial role played by outdoor and nature-based experiences in bolstering adolescents' resilience to stressors, including the COVID-19 outbreak, while also opening up opportunities for outdoor recreation during times of crisis, thereby emphasizing the need for facilitation (Jackson et al., 2021). The findings pertaining to the significance of outdoor and physical activities in promoting better health perception align with prior research. A systematic review conducted by Mygind et al. (2019), encompassing 84 studies from 2004 to 2017, underscores the conditional support for outdoor activities and their benefits for various aspects of adolescent well-being, including physical health, self-esteem, self-efficacy, endurance, and academic and cognitive performance. Notably, correlation research has established higher levels of physical activity in natural settings compared to alternative conditions. Moreover, positive outcomes have been identified across domains such as self-concept, problem-solving, and mood, and although distinct outcome categories were examined, improvements in social skills and behavioral indicators have been demonstrated (Mygind et al., 2019).

Various categories of leisure activities have been observed to yield distinct advantages concerning the sustainable health status of adolescents. This study contributes valuable empirical evidence that can inform practitioners involved in working with adolescents or provide recommendations regarding suitable leisure activities tailored to different groups of adolescents and youth with diverse goals and objectives in maintaining leisure behavior. Such evidence can facilitate adolescents in making informed choices by selecting activities that align with their specific needs, the particular environmental context, as well as their physical and mental well-being.

Rowe and Kahn (1997) delineated three primary constituents of sustainable health, one of which pertains to social commitment. This dimension encompasses two distinct aspects: the maintenance of close interpersonal relationships and the sustained engagement in meaningful and purposeful activities. Consequently, fostering regular involvement in social and productive activities can exert a positive influence on sustainable health status. The findings of our study strongly reinforce the tenets put forth by Rowe and Kahn by establishing a robust association between frequent participation in both social and physical activities and the overall well-being of adolescents. Adolescents who augment their involvement in social activities are more likely to experience an enhanced sense of well-being. Furthermore, those who regularly engage in activities characterized by meaning and purpose, such as physical activity, are more likely to sustain well-being in the long term.

The present findings lend support to the significance of positive social interactions within recreational contexts and the promotion of physical activity as pivotal components of sustainable health. As previously mentioned, the systematic review conducted by Mygind et al. underscored the relevance of social activities in fostering social connectedness and a sense of belonging among adolescents. Moreover, physical activities have been demonstrated to hold greater importance for older individuals, particularly in the case of adolescents, as they experience notable increases in life satisfaction and perceived health over time compared to older age groups (Van Willigen, 2000). Furthermore, the study revealed a positive association between the number of hours adolescents devoted to physical activity and their reported life satisfaction.

Several studies have elucidated the association between physical activities and life satisfaction in the adolescent population (Kvasková et al., 2022; Lu et al., 2020). These investigations have underscored that as adolescents elevate their level of physical activity, they are prone to accrue additional advantages. The outcomes of the current study align with

and contribute to the existing body of literature, which posits that active engagement in both social and physical activities plays a crucial role in fostering and sustaining a state of robust health.

This study acknowledges certain limitations associated with its focus on the late adolescence period; nonetheless, it contends that outdoor and physical activities demonstrate stronger associations with the sustainable health status of adolescents. Moreover, it posits that diverse categories of leisure activities may contribute to the enhancement of sustainable health status, thereby complementing the existing body of significant evidence. The findings of our study suggest that fostering connections with family and friends through engagement in outdoor activities, alongside cultivating physical fitness through participation in physical activities, can yield favorable outcomes in promoting sustainable health. Additionally, the present investigation sheds light on the impact of cultural activities on optimism levels among adolescents, indicating that involvement in outdoor and physical activities may hold greater significance in terms of subjective well-being than mere participation in physical activities alone. In conclusion, this study highlights the varying benefits associated with different leisure activities in the context of improving the well-being of adolescents. Accordingly, late adolescents should be encouraged to select activities that uniquely align with their physical and mental health needs while catering to their individual preferences. According to the study's conclusion, late adolescents should be encouraged to select activities that uniquely align with their physical and mental health needs while catering to their individual preferences.

### **Compliance with Ethical Standards**

In this research, participants were given detailed information about the aim and content of the study and signed an informed consent form. Ethical approval for this study was obtained from Sakarya University of Applied Sciences (Decision No: E-70562473-050.99-100557) and the research was carried out within the scope of the Council of Higher Education Scientific Research and Publication Ethics Instruction.

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## Appendix A

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