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Investigation of the Relationship Between Young Individuals' Attitudes Towards Technology and Their Physical Activity Levels

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Abstract

The aim of this study is to examine the relationship between young individuals' attitudes towards technology and their physical activity levels. A total of 396 young individuals with an average age of 19.5±1.3 years participated in the study voluntarily. The Attitude Towards Technology Scale and the International Physical Activity Survey (Short Form) were used as data collection tools. The data were analyzed in the SPSS program. As a result of the analysis. It was determined that the average of the participants' Attitude Scores toward Technology was 134.3±16.4 and there was no significant difference according to gender. However, it was determined that there were significant differences in terms of gender in the sub-dimensions of the scale. It was determined that the physical activity level of most of the participants (86.6%) was in the very active category, and women were significantly more physically active. It was determined that there was no significant difference between physical activity level and attitude score towards technology. In addition, it was determined that the attitude score towards technology differed significantly in terms of social media usage time and monthly income level. Based on the study findings. It was determined that the level of physical activity did not change the attitude towards technology, but the increase in daily social media usage time and monthly income differentiated the attitude towards technology. According to this, it may be useful to compare the findings of future studies on individuals of different socioeconomic levels and young people with different physical activity levels.

Keywords: Physical activity, Technology, Attitude, Health, Youth.

INTRODUCTION

It is evident that the development of technology over the past few years has revolutionized the world in many ways, particularly in how people exercise. Psychological factors, such as attitudes toward the use of technology, have emerged as critical components in the study of physical activity within the academic community. In this context, the author examines the effects of contemporary wearable health devices, smartphone-related health applications, and virtual exercise services on individuals' exercise and health-related behaviors. It is important to understand this relationship because, further physical activity means that one can either prevent or treat several conditions relating to lack of exercise. In the studies concerning the correlation between technology and physical activity the results could be rather encouraging or discouraging depending on the participants or the observation made on different time intervals within the same group. The prominence of attitude towards the usage of technology, a variable, has been identified to be related to physical activity mostly because people apply technology to accelerate weight loss and track their performance [1]. For example, optimal support of using wearable devices can be realized in their timely and supportive information to help users reach and or sustain proper levels of physical fitness [2]. In addition, mobile health applications promote community participation in physical activity through designing individualised plans and support systems [3]. On the other hand, several studies identified that negative attitude which may be doubts about effectiveness of technology, or concerns about privacy of data may affect the extent to which technology is adopted and utilised in physical activity [4]. Furthermore, technology use game and social network particularly, has been associated with reduced physical activity, MPs, which are problems for the promotion of healthy behaviours [5]. However, it can be stated that when technology was used appropriately, it can be embedded as an effective tool in increasing physical activity among the users. From the analysis of these findings, it is clear that technology when integrated into physical activity has been effective generally across the different populations of children, adults and

elderly [6]. Can it mean that technological products are changing at a very fast pace hence dominating the youthful people and therefore causing laziness? How does a young person perceive technology in his or her life and does this perception in any way affect his or her physical activity? This work aims to address these questions. The resulting data may be valuable for developing successful public health interventions and initiatives.

MATERIAL AND METHODS

A total of 396 young individuals with an average age of 19.5±1.3 years participated in the study voluntarily. Participants were selected using the sampling technique from individuals residing in the city center and visiting to the central shopping mall 3 days a week (Wednesday, Friday and Sunday) between 13:00 and 20:00 clock. A demographic information survey and an attitude scale towards technology were administered to the participants by the researcher.

Attitude Scale towards Technology:

Developed by Akbaba [7] The scale is a five-point Likert type (Strongly agree 5, Agree 4, Undecided 3, Disagree 2, Strongly disagree 1) and consists of 37 items. The highest score that items can receive is 5 and the lowest score is 1. Scale, Technology Adoption (items numbered 23, 24, 26-30), Technology and Development (items numbered 18, 20-22, 37), Monitoring Technology (items numbered 6, 9, 11, 13,16), Technology and Management (Articles numbered 5, 8, 10, 12), Fear of Technology (Articles numbered 14, 17, 19, 35), Technology and Internet (Articles numbered 15, 25, 32, 36), Trust in Technology (Articles numbered 31, 33, 34 It consists of nine sub-dimensions: Technology and Pessimism (items 1, 3, 7), Technology Use (items 2, 4). Items 1, 3, 5, 7, 10, 12, 14, 17, 19, 21, 24, 26-28, 30, 32, 35, 36 in the scale were reverse scored. The lowest score that can be obtained from the scale is 37 and the highest score is 185. The Cronbach alpha coefficient of the scale was determined as 0.91 in the previous study, and in this study the Cronbach alpha coefficient was determined as 0.87.

International Physical Activity Questionnaire – Short Form:

The International Physical Activity Questionnaire (IPAQ) short form,Turkish validity and reliability studies were conducted by Öztürk [8], was used. The survey is recommended for adults aged 18-69. The survey includes questions about FA performed for at least 10 minutes in the last 7 days. The short form consists of 7 questions that provide information about time spent in walking (Y), moderate-vigorous (OFA) and vigorous activities (AFA), and sitting. When calculating the total score of the short form, the sum of the duration (minutes) and frequency (days) of walking, moderate activity and vigorous activity is determined in MET. MET; It is the amount of oxygen consumed by a person per kg per minute (1 MET = 3.5 ml/kg/min). In IPAQ, it is accepted that AFA = 8.0 MET, OFA = 4.0 MET, Y = 3.3 MET are spent. By determining how many days a week and for how long a person does AFA, OFA and Y, the total amount of MET obtained from these three different physical activities shows the physical activity score. The physical activity score can be calculated as follows:

$$Y = 3.3 \quad OFA = 4 \quad AFA = 8$$

Physical activity score = Y + OFA + AFA (MET-min/week)

Individuals are divided into 3 categories according to the score obtained from the form:

Inactive ones: >600 MET-min/week

Minimum Active: 600 – 3000 MET-min/week

HEPA active ones: <3000 MET-min/week

Statistical analysis

Data were evaluated in the SPSS program. Demographic data are shown as percentage (%) and frequency (n). For comparison analysis between variables, Mann-Whitney U Test analysis was used for paired groups. Spearman correlation test was applied for relationship analysis between variables.

Ethical consent

This study was approved by the scientific research ethics committee (dated 25.07.2024 and numbered 11/10). All participants filled out the informed consent form after being informed about the procedures in accordance with the Helsinki Declaration of Human Experimentation.

RESULTS

The demographic characteristics of the participants are shown in Table 1. According to this; Most of the participants (51.8%) have a monthly income between 9000-15000 TL, they generally use social media for 2-5 hours daily (55.3%), and they mostly use their computers for homework (44.8%). has been determined. In addition, it was determined that the physical activity level of most of the participants (86.6%) was in the very active category. The results of the analysis comparing the participants' attitude scores towards technology and physical activity levels according to their gender are shown in Table 2. When the table is examined; It is seen that the total attitude scores of the participants do not differ significantly according to gender. However, considering the scale sub-dimensions; It was found that there were significant differences in terms of gender in all sub-dimensions except the technology and development sub-dimension. Additionally; When the Physical Activity total scores (PAL) of the participants are examined, it is seen that there is a significant difference in favor of women in terms of gender. The results of the Kruskal-Wallis analysis, which was conducted to analyze the differentiation of participants' attitudes towards technology according to their daily social media usage time, are shown in Table 3. Looking at the analysis results; It was determined that there was a significant difference between the participants' daily social media usage time and their attitude scores towards technology. The results of the Kruskal-Wallis analysis, which was conducted to analyze the differentiation of participants' attitudes towards technology according to monthly income, are shown in Table 4. Looking at the analysis results; It was determined that there was a significant difference between the monthly income levels of the participants and their attitudes towards technology. The results of the Kruskal-Wallis analysis, which was conducted to analyze the differentiation of participants' attitudes towards technology according to their physical activity levels, are shown in Table 5. Looking at the analysis results; It was determined that there was no significant difference between the participants' physical activity levels and their attitudes towards technology.

The Spearman's rho correlation analysisanalysis reveals a significant positive relationship between age and total score, and a significant negative relationship between physical activity score and BMI. These findings suggest that older individuals tend to have higher total scores, and higher physical activity levels are associated with lower BMI. Other correlations, however, are weak and not significant, indicating no strong relationships between those variables in this sample.

DISCUSSION

This study, conducted to understand young individuals' attitudes toward technology and the impact of social media usage on their physical activity levels, reveals significant differences in the relationship between technology use and physical activity.

There was no significant difference between men and women regarding general attitude scores ($p = 0.974$). This finding indicates that young individuals generally exhibit similar attitudes toward technology. In response to the question of whether general perceptions of technology or general attitudes toward technology are independent of gender, Venkatesh [9], using the Technology Acceptance Model (TAM), found

Table 1: Demographic characteristics of the participants

Gender	**n**	**%**
Female	196	49.5
Male	200	50.5
Total	396	100
Montly income (TL)		
8500 and below	54	13.6
Between 9000 and 15000	205	51.8
above 15000	137	34.6
Total	396	100
Do you have a mobile phone?		
Yes	396	100
No	0	0
Do you use social media?		
Yes	396	100
No	0	0
Social media usage time		
less than 1 hour	29	7.3
2-5 hours	219	55.3
5-8 hours	104	26.3
more than 8 hours	44	11.1
Total	396	100
Do you have a computer?		
Yes	270	68.2
No	136	31.8
Total	396	100
Purpose of computer use		
Do homework	331	44.8
Play a game	196	25.5
Social media monitoring	84	11.3
read e-mail	62	8.4
Making a video conference call	65	8.8
Total	738	100
Physical Activity Category		
Inactive	5	1.3
Minimum Active	48	12.1
Very active	343	86.6
Total	396	100

Table 2: Attitude scale score analysis according to gender of participants

	Gender	**x±ss**	**Mean rank**	**Sum rank**	**u**	**p**
Attitude score	Male	135.1±19.3	198.31	39662.50	19562.5	0.974
	Female	133.4±12.8	198.69	38943.50		
Adopting technology	Male	26.1±4.0	184.37	36874.00	16774.0	0.012
	Female	26.6±4.6	212.92	41732.00		
Technology and development	Male	17.7±3.5	192.49	38497.50	18397.5	0.287
	Female	17.8±2.2	204.64	40108.50		
monitoring technology	Male	17.7±3.6	210.26	42052.50	17247.5	0.037
	Female	16,5±3,4	186.50	36553.50		
Technology and management	Male	15.8±2.6	212.67	42534.00	16766.0	0.012
	Female	15.2±1.8	184.04	36072.00		

fear of technology	Male	13.8±2.9	216.67	43334.00	15966.0	0.001
	Female	12.8±3.2	179.96	35272.00		
Technology and internet	Male	15.7±2.6	183.97	36793.50	16693.5	0.010
	Female	16.4±2.2	213.33	41812.50		
Trust in technology	Male	9.5±1.6	180.62	36124.00	16024.0	0.001
	Female	10,1±2.2	216.74	42482.00		
Technology and pessimism	Male	10.9±2.1	179.93	35985.00	15885.0	0.001
	Female	11.5±2.1	217.45	42621.00		
Technology use	Male	7.8±1.5	246.53	49306.00	9994.0	0.000
	Female	6.2±1.7	149.49	29300.00		
PAL (Pysical activity level)	Male	6291.6±2582.5	186.14	37228.50	17128.5	0.030
	Female	6820.9±2464.3	211.11	41377.50		

Table 3: Attitude score analysis according to daily social media use

Daily social media time	**x±ss**	**Mean rank**	**Kruskal-Wallis H**	**P**
less than 1 hour	119.8±2.1	97.72	62.754	0.001
2-5 hours	133.3±18.1	185.02		
Between 5-8 hours	142.5±9.1	265.05		
more than 8 hours	129.5±17.1	174.73		
Total	134.3±16.4			

Table 4: Attitude score analysis according to monthly income

Monthly income (TL)	**x±ss**	**Mean rank**	**Kruskal-Wallis H**	**P**
8500 and below	130.5±8.2	176.62	6.747	0.034
Between 9000 and 15000	134.1±18.8	191.29		
above 15000	136.1±14.7	217.91		
Total	134.3±16.4			

Table 5: Attitude score analysis according to physical activity category

Physical activity category	**x±ss**	**Mean rank**	**Kruskal-Wallis H**	**P**
Inactive	136.1±12.6	218.80	0.325	0.850
Minimum active	132.7±14.1	191.96		
Very active	134.5±16.8	199.12		
Total	134.3±16.4			

Table 6: Relationship analysis results between variables

		Age	Attitude score	PAL	BMI
Age	r	1.000	0.143**	-.009	-.010
	p	.	0.004	0.864	.835
Attitude score	r	.143**	1.000	0.079	-.013
	p	.004	.	0.117	.789
PAL	r	-.009	0.079	1.000	-.199**
	p	0.864	0.117	.	.000
BMI	r	-.010	-.013	-.199**	1.000
	p	,835	0.789	.000	.

**. Correlation is significant at the 0.01 level (2-tailed).

that people's perceptions of technology are, on average, similar. In technology adoption, women's mean was higher than that of men but the difference was significant ($p = 0.012$). This infers that female will be more imperative in the adoption of changes required by new technology. The study presented byresearcher that is a cross-sectional online survey that showed that women might be more effective in terms of social media and technological digital tool usage and women also may show higher level of technological development than men [10]. Significance of differences focused on the performance of women in technology monitoring 't' = 2.21, $p = 0.037$ which was statistically significant followed by technology management 't' = 2.85, $p = 0.012$ which was also statistically significant but more than the previous one. Such study provides evidence that women are more informed about technology advancement and technology operation than men. In accordance with some investigation) it can be stated that women apply information and communication technologies deliberately and systematically and, thus, improve their technological literacy [11,12]. The study also seek to establish the comparison of the two groups (male & female) on the fear of technology subscale; the result indicated that the mean score of the male participants were higher than the female participants at the 0.001 level of significance. From this result the researcher is able to deduce that perhaps men are more cautious about technology and therefore may less inclined to use it.

On the other hand, according to most of the reports, females are likely to exhibit higher levels of technological anxiety than are males. For instance, the studies done on technology anxiety in both young and elder people and both male and female showed that women are more sensitive to computer phobic reactions than man [13]. Moreover, meta-synthesis analysis of gender and perceived enthymeme concerning technologies reveals the fact that female participants were more apprehensive than male participants probably because female participants are less involved with technologies than male participants and therefore are not very familiar with these Technologies [14].

In turn, it was found out that women had higher results than men in the number of uses of technology and Internet ID ($p = 0.010$), which points to the fact that women interact with the Internet and different technologies more actively. According to the literature, women are more active than men in SNS and spending more time in SNS than men [15,16]. Further, there were significant differences between the sub-dimension of trust in technology with women scoring higher that men ($p = 0.001$) as well as the sub-dimension of technology use ($p = 0.000$). This revelation only implies that women have much more confidence in the use of technology as well as their interactions with it. The study carried out by another researcher stated that women are more comfortable with the use of digital technologies than men and they incorporate the technologies into their use more often [17]. When examining physical activity scores, it was found that women had higher levels of physical activity than men ($p = 0.030$). This finding may indicate that women place greater importance on physical activity. In other study reported that women's health awareness and attitudes towards physical activity are more pronounced than those of men [18]. Overall, this study reveals that young individuals' attitudes towards technology and physical activity differ by gender.

It is also noteworthy that women tend to be more positive than men regarding technology adoption, monitoring, management, and trust. However, the findings indicate a significant difference; in fact, men scored higher on the Fear of Technology scale. Based on the results presented, one cannot overlook gender differences in the use and acceptance of technology, as these differences may significantly influence technology education and policy development.

Kruskal-Wallis test indicate that daily time spent on social media is significantly related to physical activity (Kruskal-Wallis $H = 62.754$, $p = 0.001$). For instance, the current study found that individuals who use social media for 5 to 8 hours a day tend to be more physically active compared to others. This finding is partially supported by existing literature. According to various studies, different motivational content present on social media platforms can encourage individuals to engage in physical activities, thereby stimulating physical activity levels [19-21]. However, it is important to note that the level of exercise may decrease as the time spent on social media increases. For example, Twenge and Campbell [22] highlight that social media use among youth is associated with increased screen time, which consequently leads to lower levels of physical activity. When examining the relationship between monthly income and physical activity, the findings reveal that as income levels rise, physical activity levels also increase (Kruskal-Wallis $H = 6.747$, $p = 0.034$). A comparison of respondents from different income groups shows that individuals with higher incomes are more likely to engage in physical activities, as their financial resources can be allocated toward sports equipment, clubs, and other activities. Lubans et al. [23] also emphasize the importance of considering socioeconomic status in relation to physical activity, noting that individuals with higher socioeconomic status tend to exercise more.

Upon examining the categories of physical activity, no significant differences were found among the inactive, minimally active, and very active groups regarding their perceptions of technology (Kruskal-Wallis $H = 0.325$; $p = 0.850$). This finding suggests that attitudes toward technology may not directly influence the sensory-motor experience. Nevertheless, it should be stated that the interaction between the technology usage and exercise is not only positive, and includes several shades of the spectrums. For instance, Rhodes et al. [24] stated that it is only possible to address the issues of physical activity and technology utilization by using factors such as motivation, environmental context and social support.

CONCLUSION

Therefore, the present work extends knowledge regarding youth's attitudes towards technology and the effects of time spent on SSM on their PA. The conclusions drawn from the results emphasize that the use of the permanent technologies or technologies in a certain way can either enable or discourage physical activity. Furthermore, the findings also show that the monthly income plays an important factor in physical activity whereby people with higher monthly income have higher level of physical activity. Surprisingly, this research did not obtain any correlation between permissive or negative general attitudes towards technology and physical activity. Such findings stress the need for moderation on the part of youths in the use of technology in their day-to-day activities as they seek to lead healthy lives.

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Conflict of interest

There is no conflict of interest.

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REFERENCES

1. Prince SA, Saunders TJ, Gresty K, Reid RD. A comparison of the effectiveness of physical activity and sedentary behaviour interventions in reducing sedentary time in adults: a systematic review and meta-analysis of controlled trials. Obesity reviews. 2014;15(11):905-19.
2. Patel MS, Asch DA, Volpp KG. Wearable devices as facilitators, not drivers, of health behavior change. Jama. 2015;313(5):459-60.
3. Payne HE, Lister C, West JH, Bernhardt JM. Behavioral functionality of mobile apps in health interventions: a systematic review of the literature. JMIR mHealth and uHealth. 2015;3(1):e3335.
4. Vassli LT, Farshchian BA. Acceptance of health-related ICT among elderly people living in the community: A systematic review of qualitative evidence. International Journal of Human–Computer Interaction. 2018;34(2):99-116.

5. Stiglic N, Viner RM. Effects of screentime on the health and well-being of children and adolescents: a systematic review of reviews. BMJ open. 2019;9(1):e023191.
6. Brickwood KJ, Watson G, O'Brien J, Williams AD. Consumer-based wearable activity trackers increase physical activity participation: systematic review and meta-analysis. JMIR mHealth and uHealth. 2019;7(4):e11819.
7. Yücel NB, Giliç F, Inandi Y. School Administrators' Attitudes towards Technology: Do They Resist to Change? Journal of Educational Leadership and Policy Studies. 2022;6(2):n2.
8. Öztürk F. Öğrencilerde Uluslararası Fiziksel Aktivite Anketinin Geçerliliği Ve Güvenirliği Ve Fiziksel Aktivite Düzeylerinin Belirlenmesi [Internet]. tr-scales.arabpsychology.com. [Ankara]: Hacettepe University; 2005 [cited 2024 Dec 2]. Available from: https://tr-scales.arabpsychology.com/wp-content/uploads/pdf/uluslararasi-fiziksel-aktivite-anketi-toad.pdf
9. Venkatesh V, Thong JY, Xu X. Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. MIS quarterly. 2012:157-78.
10. Madigan S, Browne D, Racine N, Mori C, Tough S. Association between screen time and children's performance on a developmental screening test. JAMA pediatrics. 2019;173(3):244-50.
11. Davison C, Argyriou E. Gender preferences in technology adoption: An empirical investigation of technology trends in higher education. International Journal of Gender, Science and Technology. 2016;8(3):405-19.
12. Lemons MA, Parzinger M. Gender schemas: A cognitive explanation of discrimination of women in technology. Journal of Business and Psychology. 2007;22(1):91-8.
13. Gilroy FD, Desai HB. Computer anxiety: Sex, race and age. International Journal of Man-Machine Studies. 1986;25(6):711-9.
14. Cai Z, Fan X, Du J. Gender and attitudes toward technology use: A meta-analysis. Computers & Education. 2017;105:1-3.
15. Krasnova H, Veltri NF, Eling N, Buxmann P. Why men and women continue to use social networking sites: The role of gender differences. The Journal of Strategic Information Systems. 2017;26(4):261-84.
16. Scott CF, Bay-Cheng LY, Prince MA, Nochajski TH, Collins RL. Time spent online: Latent profile analyses of emerging adults' social media use. Computers in Human Behavior. 2017;75:311-9.
17. Czaja SJ. The role of technology in supporting social engagement among older adults. Public Policy & Aging Report. 2017;27(4):145-8.
18. Meyer K, Niemann S, Abel T. Gender differences in physical activity and fitness—association with self-reported health and health-relevant attitudes in a middle-aged Swiss urban population. Journal of Public Health. 2004;12(4):283-90.
19. Hayes M. Social media and inspiring physical activity during COVID-19 and beyond. Managing Sport and Leisure. 2022;27(1-2):14-21.
20. Bauman A, Chau J. The role of media in promoting physical activity. Journal of Physical Activity and Health. 2009;6(s2):S196-210.
21. Larwin KH, Larwin DA. Decreasing excessive media usage while increasing physical activity: A single-subject research study. Behavior modification. 2008;32(6):938-56.
22. Twenge JM, Campbell WK. Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study. Preventive medicine reports. 2018;12:271-83.
23. Lubans D, Richards J, Hillman C, Faulkner G, Beauchamp M, Nilsson M et al. Physical activity for cognitive and mental health in youth: a systematic review of mechanisms. Pediatrics. 2016;138(3):e20161642.
24. Rhodes RE, McEwan D, Rebar AL. Theories of physical activity behaviour change: A history and synthesis of approaches. Psychology of sport and exercise. 2019;42:100-9.