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# The Effect of Leisure Time Satisfaction Levels of University Students Taking Reformer Pilates Training on Life Satisfaction: Structural Modeling

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## Abstract

This study aims to examine the relationship between leisure time satisfaction and life satisfaction of university students receiving Reformer Pilates training. For this purpose, 234 people from Afyonkarahisar province, reached by purposeful sampling method, constituted the research participants. Leisure Satisfaction Scale developed by Beard and Raghep (1980) and The Satisfaction with Life Scale developed by Ed Diener et al. (1985) was used as a data collection tool. The Cronbach Alpha reliability coefficient of the Leisure Satisfaction Scale was 0.76, and the Cronbach Alpha reliability coefficient of the life satisfaction scale was 0.70. For the sub-dimensions of the leisure satisfaction scale, the internal consistency coefficients ranged from 0.70 to 0.89. Validity and reliability analysis (EFA) of the obtained data was performed, then confirmatory factor analysis (CFA) and structural equation modeling (SEM) were applied. As a result of the established model (RMSEA = .07, CFI = .96), a highly significant relationship was found between leisure time satisfaction and life satisfaction ( $p < 0.05$ ). It was found that the leisure time satisfaction levels of female students who took the reformer pilates training had a high effect on life satisfaction. The findings suggest that reformer pilates training plays an important role in increasing life satisfaction in young women as a leisure time evaluation tool.

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## Introduction

The Since the beginning of time, people have discovered and developed new technologies to make daily life activities more efficient and, therefore, more sedentary with less effort (Tattersall, I., 2009). Furthermore, throughout history, technological advances in medicine have led to a significant increase in the quality of life and satisfaction (Thompson, WR, Sallis, R., Joy, E., Jaworski, CA, Stuhr, RM, & Trilk, JL 2020). The combination of increased sedentary behavior and increased quality of life and satisfaction has resulted in a sharp increase in chronic illnesses and diseases related to overweight and obesity. Although people may live longer, they do so with lower physical function and lower quality of life (Woessner, MN, Tacey, A., Levinger-Limor, A., Parker, AG, Levinger, P., & Levinger, I., 2021). The technological revolution was not limited to improving productivity, lifestyle and leisure time. However, with the development of technology, the types of exercise and the use of equipment have also changed. Pilates, which has become popular in recent years, especially among women, has

taken its place in exercise training. In developing his method, J.Pilates (the founder of Pilates exercises) combined both eastern and western concepts, incorporating the ancient Greek and Roman exercise systems, as well as mental focus and the specific breathing of yoga (Pilates and Robbins, 2012). Pilates provides full coordination of body, mind and spirit. Pilates is based on six principles (centering, concentration, control, precision, breathing, and flow) that increase attention and motivation and improve cognitive functions while minimizing stress in the body (Memedova, 2015). Pilates exercises can be applied in a wide area using different apparatus. Thanks to springs with different resistance levels, pulleys and equipment working with gravity, it improves the musculature of the participants from various angles and ensures correct position, posture and optimum movement capacity (Aladro-Gonzalvo et al., 2012).

One of the pilates exercises performed using a piece of equipment is reformer exercises. Reformer is one of the most popular tools in pilates equipment. The Reformer instrument allows supporting neuromuscular training in functional positions and planes with a focus on spinal stabilization (Caldwell et al., 2009). The purpose of the exercises performed on the reformer device, besides strengthening the body, is to give the body the proper flexibility within the framework of its current potential, to correct the posture disorders and to apply the principles of fluent movement at an appropriate pace by keeping the correct breathing level under control (Pilates and Robbins, 2012). With the Reformer, it is possible to see many benefits, such as increasing the body's balance control and joint mobility, and increasing the length of the muscles by gaining strength and flexibility (Aka, İbiş, and Arıcı, 2020).

Today, university students can participate in various physical activities and social activities to make use of their limited spare time during intensive lecture periods. Decreased physical activity levels, especially with the increase in the use of technological tools, negatively affect youth health. In this context, few studies in education, psychosocial and health sciences have studied the effect of leisure time satisfaction on life satisfaction of students who performed the reformer pilates. In this study, the relationship between fundamental parameters of leisure time that will affect the lives of young people and reformer pilates exercises and students' leisure time satisfaction and life satisfaction were examined. For the first time, the structural model of the problem is represented. With this model, the effects of leisure time satisfaction levels of university students doing reformer pilates on life satisfaction will be determined.

## **Leisure Time Satisfaction**

Beard and Ragheb (1980) describe leisure time satisfaction as a positive perception or emotion gained by individuals. In addition, leisure time satisfaction provides the opportunity to experience life with certain activities (Chun, S., Lee, Y., Kim, B., & Heo, J., 2012). It also plays a crucial role in the relationship between leisure and well-being (Chang. et al., 2019). In a broader scope, leisure satisfaction is the level of contentment from the active or passive participation of an individual to activities in order to gain new skills, health, social, cultural, sportive or artistic expectations, without expecting any financial gain, to gain a sense of health, entertainment, contentment, renewal and happiness, regardless of external compulsions. Ardahan and Lapa (2010), Spiers and Walker (2008)

states that leisure satisfaction significantly affects happiness, peace and quality of life both above and beyond gender and ethnicity.

There are many studies on leisure satisfaction in the literature (Agate et al., 2009; Dick et al., 1981; Karagöz et al., 2022). In a study (Gül, 2019), it was determined that university students' leisure satisfaction had an effect on life satisfaction, while another study (Ardahan & Lapa, 2010) revealed that in addition to this effect in university students, leisure satisfaction differs according to income. On the other hand, physiological and organizational recreation factors also affect psychological, social and physical leisure satisfaction (Yayla and Çetiner, 2019). These and similar research results can be evaluated as young women can use reformer pilates as a leisure time tool to ensure life satisfaction and to be healthy and happy. When these studies are examined, it is seen that they were mainly carried out in the late 20th century and the 21st century. It is thought that this situation is caused by many reasons such as population growth, urbanization, narrowing of recreation areas, technology addiction, and an increase in the level of leisure time. However, the main point to be drawn here is the increasing need for recreation and the relationship between the satisfaction levels of individuals from their spare time and their lives in such an environment.

## **Life Satisfaction**

Getting satisfaction from life and being happy are the most fundamental goals of people. Life satisfaction is explained as a general evaluation of a person's quality of life (Veenhoven, R., 2012, Pavot, WG, & Diener, E. 1993). It is stated that life satisfaction is affected by many factors such as the meaning that the individual attributes to life, personality structure, relationships, harmony and expectations (Pavot, W., Diener, E. (2009). According to Chris (2006), many factors such as mental-physical health, harmony and relationships with other people affect life satisfaction. In addition to these factors that affect people from all parts of the society, it is thought that there may be features specific to that period and environment that affect the life satisfaction of university students. For example, it is stated that being satisfied with the department they study is an essential factor in life satisfaction (Serin, Serin, & Özbaş, 2010).

Life satisfaction is crucial for almost every group, but studying what university youth experience in this regard seems important for various reasons. Considering the stages of development, the university years coincide with emerging adulthood, which is the end of adolescence and the beginning of adulthood. During this period, people may be more stressed and anxious compared to other periods (Meadows, Brown, & Elder, 2006). Due to the characteristics of the period, people encounter many stress-inducing factors such as gaining independence, self-development, establishing close relationships, adapting to the new environment, and preparing for the profession. In addition, students face academic, financial and various social problems that will affect their life satisfaction (Dusselier, Dunn, Wang, Shelley, & Whalen, 2005). The life satisfaction of people who have difficulty fulfilling these tasks also decreases (Jihan et al., 2012, Newman and Newman, 2017). Life satisfaction, which is an important element of a healthy life, is an essential factor of future mental and physical health (Jihan et al., 2012). It is also an important element that will increase the success of university students in their academic studies. Studies report that physical and mental factors affect life satisfaction, and participation in physical activities has

a positive effect on life satisfaction of psychological and mental health (Avşaroğlu and Koç, 2019; Tel and Sarı, 2016). Therefore, it can be said that meeting the psychological needs of individuals and having a high level of physical and mental health have a positive effect on life satisfaction. There are studies showing that there is a positive relationship between life satisfaction and physical and mental health (Samaha & Hawi, 2016). However, we noticed that there are no studies investigating the effects of leisure time fulfillment on life satisfaction targeting university students who do reformer Pilates exercises. The current research findings gain originality in terms of filling the gap in the field in a period of the pandemic.

## **Method**

### **Purpose and Model of the Research**

This study aimed to examine the relationship between leisure time satisfaction and life satisfaction of female university students receiving reformer pilates training. For this reason, within the scope of the research, the survey was carried out on the relational survey model, which aims to determine the existence or degree of change between two or more variables among the general survey models.

### **Research Group**

256 women with an average age of 21.8 ( $\pm 2.42$ ) years, average height of 163 ( $\pm 6.56$ ) cm, and average body weight of 59.5 ( $\pm 9.43$ ) kg, who received undergraduate education in different faculties at Afyon Kocatepe University, voluntarily participated in the study. After removing the inappropriate data, analyzes were made with 234 participants. Sample selection was carried out with the help of purposive sampling method, which is one of the non-probability sampling methods.

### **Data Collection Tools**

The data were obtained from female students doing reformer pilates in Reformer pilates halls, fitness centers and private studios in Afyonkarahisar. While 175 of the research data were obtained with a one-to-one survey, the remaining 59 surveys were collected with a survey created via Google Drive.

*Personal Information Form:* In order to reach the demographic information of the participants, a personal information form was created by the researcher. In the content of the personal form, there are questions such as age, height, class, faculty type, income status, purpose of doing pilates, frequency of pilates, duration of pilates, exercise status other than reformer pilates.

*Life Satisfaction Scale (LIFES):* The Scale was developed by Diener, Emmons, Larsen, and Griffin (1985) and it was adapted into Turkish by Dağlı and Baysal its validity and reliability study was conducted (Dağlı and Baysal., 2016). The scale was originally five-point Likert type and one-dimensional. As a result of the validity and reliability study, it was formed as a one-dimensional and five-point Likert type from a total of five items. The Cronbach 's alpha internal consistency coefficient of the scale ranges from 0.70 to 0.93. The Cronbach 's alpha

coefficient of the scale was determined as 0.70 in this study. It consists of different scoring systems. The lowest score of the scale is 5 and the highest score is 35. In the LIFES scoring, getting a score of 7 and below is low satisfaction level, getting a score between 8-12 is a medium life satisfaction level, and a score of 13 and above is a high life satisfaction level (Kaçan et al., 2015).

*Leisure Satisfaction Scale (LSS):* In the study, the "Leisure Time Satisfaction Scale" (LSS) developed by Beard and Ragheb (1980) and the Turkish validity and reliability of the scale conducted by Vapur and Sevin (2021) was applied to evaluate the leisure time satisfaction of the participants. Beard and Ragheb (1980) stated that the sub-dimensions of leisure satisfaction are psychological satisfaction, educational satisfaction, social satisfaction, resting satisfaction, physiological satisfaction and aesthetic satisfaction. The dimensions reflect people's perceptions of their needs met through their leisure experiences and situations. A 5- point Likert (5 = strongly agree, 1 = strongly disagree) was applied.

Cronbach's Alpha internal consistency coefficients calculated on the data collected within the scope of this study were 0.72 for the total scale, 0.70 for the resting satisfaction sub-dimension, 0.80 for social satisfaction, 0.79 for educational- psychological satisfaction, and 0.78 for aesthetic satisfaction. According to the results of the Explanatory factor analysis performed on this scale, the 5, 9, 17 and 18th statements were removed from the scale because they were loaded on more than one factor. '1, 2, 3, 4, 6, 7' expressions in the scale represented psychological-educational satisfaction, '8, 10, 11, 12' expressions social satisfaction, '13, 14, 15, 16, 19, 20' expressions resting satisfaction and '21, 22, 23, 24' expressions express aesthetic satisfaction.

### **Analysis of Data**

Within the scope of the study, the relevant data were collected by applying a questionnaire to 256 people containing demographic questions and scales. However, after removing the erroneous questionnaire forms, the analysis of the data was carried out on 234 valid questionnaires. SPSS (Statistical Package for the Social Sciences) package program and LISREL (Linear Structural Relations) package programs were used to analyze the data obtained. Percentage (%) and frequency (f) methods were used to determine the distribution of personal information of the participants. It was determined that the skewness and kurtosis coefficients of the sample group of the students who received Reformer pilates training from the LSS and LIFES scales were between -1.5 and +1.5, and it was observed that the data were normally distributed (Ong and Puteh., 2017). Explanatory Factor Analysis (EFA) was applied to determine the sub-dimensions of the related scales. Confirmatory Factor Analysis (CFA) was performed to confirm the relationships between sub-dimensions. Finally, Structural Equation Modeling (SEM) was used to model the relationships between the scales. Structural Equation Modeling (SEM) is a statistical modeling technique that reveals the cause-effect relationship between measured and unmeasured variables (Dursun and Kocagöz).

### **Findings**

The results regarding the demographic characteristics of the participants are given in Table 1.

Table 1. Demographic Characteristics Scale Total Scores and Averages of Female University Students receiving Reformer Pilates Training

Variables	Category	Frequency	Percentage (%)	LSS	LIFES
				$\bar{x} \pm sd$	$\bar{x} \pm sd$
Grade	1.Grade	59	25.2	4.32±0.34	4.23±0.36
	2.Grade	64	27.4	4.36±0.32	4.28±0.32
	3.Grade	57	24.4	4.28±0.42	4.26±0.36
	4.Grade	54	23.1	4.26±0.36	4.20±0.35
Faculties	Education	57	24.4	4.21±0.45	4.17±0.47
	Engineering	47	20.1	4.28±0.35	4.25±0.33
	Sports science	52	22.2	4.43±0.28	4.32±0.30
	Law	38	16.2	4.45±0.18	4.31±0.22
	Technology	40	17.1	4.18±0.37	4.18±0.29
Income levels	medium	112	47.9	4.31±0.33	4.23±0.33
	good	90	38.5	4.32±0.39	4.25±0.36
	very good	32	13.7	4.27±0.37	4.28±0.37
Reformer pilates time (month)	1-3	46	19.7	4.46±0.33	4.33±0.33
	3-6	50	21.4	4.36±0.34	4.34±0.40
	6-9	40	17.1	4.24±0.33	4.19±0.30
	9-12	34	14.5	4.34±0.35	4.20±0.31
	12+	64	27.4	4.18±0.38	4.16±0.34
Frequency of Reformer pilates (day / week)	1-2	130	55.6	4.33±0.33	4.24±0.31
	3-4	88	37.6	4.26±0.40	4.24±0.39
	5-6	16	6.8	4.36±0.39	4.27±0.38
Purpose of Reformer pilates	for health	199	85.0	4.32±0.37	4.25±0.36
	to lose weight	16	6.8	4.29±0.30	4.22±0.33
	be fit	13	5.6	4.12±0.33	4.21±0.23
	for the right breath	6	2.6	4.39±0.25	4.26±0.35

LSS: Leisure satisfaction scale, LIFES: Life satisfaction scale, sd: standard deviation

In the factor analysis for the Leisure Satisfaction Scale, the KMO value was calculated as 0.863. Accordingly, the sample size is suitable for factor analysis (KMO>0.500). Within the scope of the Bartlett test, the  $X^2$  value was found to be 1754,324 and statistically significant ( $p<0.05$ ). According to the KMO and Bartlett test results, it was concluded that the data were suitable for factor analysis. According to the exploratory factor analysis results, it is seen that these 4 factors explain 54,207 of the total variance. CFA was applied to the leisure satisfaction scale used within the scope of the research, and the four-dimensional structure consisting of educational-psychological, resting, social and aesthetic sub-dimensions was verified. In addition, the fit indices obtained as a result of CFA ( $X^2 = 3.61$ ;  $X^2 / df = 1.805$ ; RMSEA= 0.059; CFI= 0.99; IFI= 0.99; NFI= 0.99; NNFI= 0.98; GFI= 0.99; AGFI= 0.96) can be said to be in the range of values accepted in the literature (see Table 2).

Table 2. Exploratory Factor Analysis (EFA) Results of Leisure Satisfaction Scale

Factors / Items	Factor loading	Eigen values	Explained Variance (%)	$\alpha$
<b>LEP educational psychological satisfaction</b>				
Leisure activities are very interesting to me.	0.670			
Leisure activities give me confidence	0.617			
Leisure activities give me a sense of accomplishment.	0.603			
I use many different skills in leisure activities.	0.602			
Leisure activities increase my knowledge.	0.593	6.600	31.429	0.79
Leisure activities create the opportunity to try new things	0.554			
Leisure activities help me to know myself.	0.508			
<b>LSS social satisfaction</b>				
Leisure activities give an opportunity to get to know people better.	0.808			
Leisure activities help me to relate to people closely	0.755	2.158	10.276	0.80
I found the people I know in my leisure activities sincere.	0.663			
I consider myself the same as people who enjoy doing leisure activities.	0.592			
<b>LR_ rest satisfaction</b>				
Leisure activities help me relax.	0.734			
Leisure activities cause me to release stress.	0.687			
Leisure activities make me feel emotionally well.	0.650	1.567	7.461	0.70
I am interested because I enjoy doing leisure activities.	0.553			
Leisure activities rejuvenate me.	0.548			
Leisure activities help me stay healthy.	0.510			
<b>LES aesthetic satisfaction</b>				
The places where I participate in leisure activities are clean.	0.778			
The places where I participate in leisure activities are interesting.	0.759			
The places where I participate in leisure activities are beautiful.	0.726	1.059	5.041	0.78
The design of the places where I participate in leisure activities is good.	0.628			
<b>Leisure Time Satisfaction scale</b>			54.207	0.72

### Structural Equation Modeling for Research

The structural model presented within the scope of the research has been tested and the fit indexes of the model ( $X^2 = 54.20$ ;  $X^2 / df = 2.25$ ; RMSEA= 0.073; CFI= 0.96; IFI= 0.96; NFI= 0.93; NNFI= 0.94; GFI= 0.95). ; AGFI=



0.92) were found to be in the range of excellent fit and accepted values in the literature (Shermelleh-Engel and Moosbrugger, 2003) (see Figure 1).

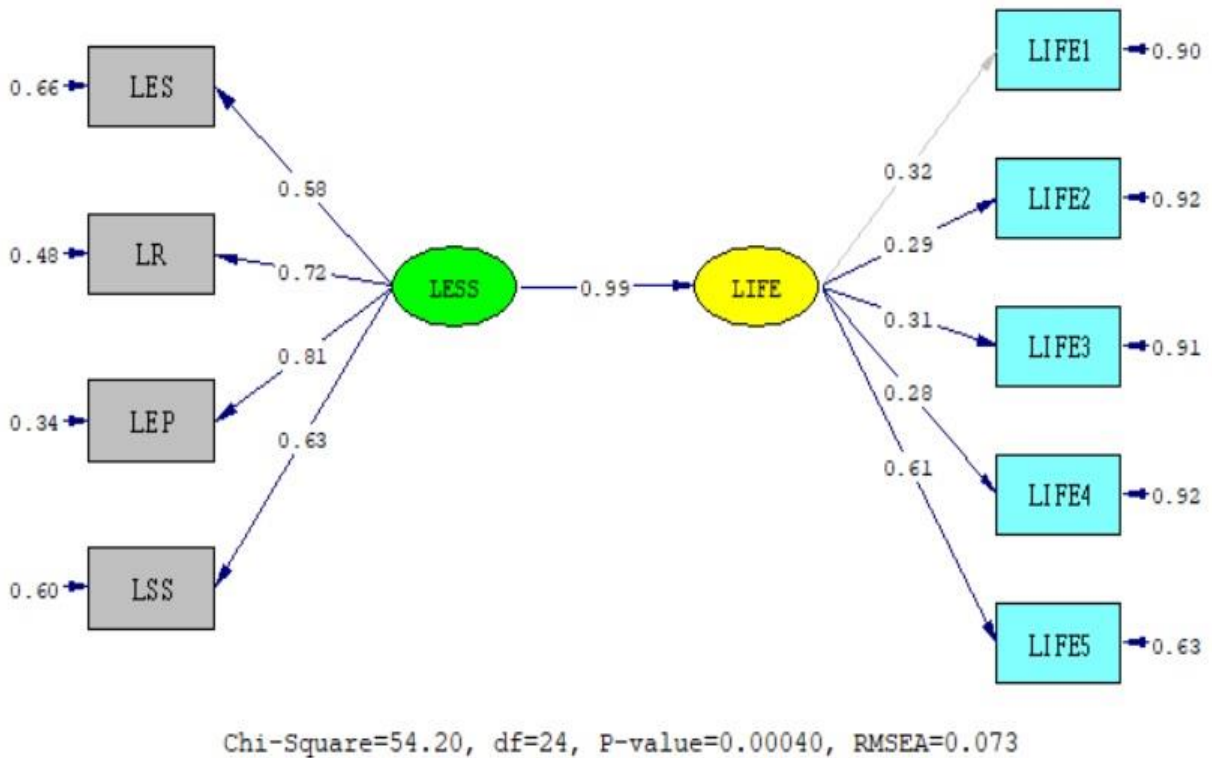


Figure 1. Structural Equation Model

When Figure 1 is examined, it is seen that the research hypothesis tested within the scope of the structural model is accepted. A significant relationship was found between the leisure time satisfaction and life satisfaction of female students receiving reformer pilates training. In this direction, it has been found that leisure time satisfaction affects life satisfaction:

Hypothesis	Path	Standardized parameter estimates	t statistic	Conclusion
H <sub>1</sub>	(LESS) ---> (LIFE)	0.99	4.51	verified

H<sub>1</sub> : There is a significant relationship between leisure time satisfaction and life satisfaction.

### Discussion and Conclusion

In this study, the effect of leisure time satisfaction on life satisfaction of female university students receiving reformer Pilates training was investigated. In this direction, the research sample was obtained from Afyonkarahisar with purposeful sampling, which is a non-probability sampling method. It consisted of 234 female university students who were contacted face-to-face and via the internet. In addition to validity and reliability analyses, CFA and SEM analyses were applied to the data obtained within the scope of the research. As a result of the validity and reliability analyses applied for the leisure satisfaction scale, it was determined that the AVE, CR, Cronbach's Alpha values were above the values predicted in the literature. Yoon and Uysal (2005) state that

the CR and Cronbach's Alpha ( $\alpha$ ) values for the scale dimensions should be greater than 0.70, while Fornell and Larcker (1981) state that the AVE values should be greater than 0.50. Therefore, it can be stated that the leisure satisfaction scale used in the research is valid and reliable. In addition, as a result of the CFA applied to the scale, the 4-dimensional and 21 statement structure consisting of educational-psychological, social, recreational and aesthetic satisfaction was confirmed. Therefore, it is possible to say that the leisure time satisfaction levels of university students receiving Reformer Pilates education consist of educational psychological, social, recreational and aesthetic dimensions.

As a result of the SEM analysis applied to examine the relationship between the variables considered within the scope of the research, it was concluded that there is a significant relationship between leisure time satisfaction and life satisfaction. Accordingly, our hypothesis developed within the scope of the research was accepted. It can be seen that the results obtained from the research support the relevant literature. In the study of Himmetoğlu and Ayhan (2021), involving university students, they concluded that university students who use social media motivation as a leisure activity are associated with leisure satisfaction.

In the current study, reformer Pilates exercises as a leisure time activity affect the increase in the level of leisure time satisfaction, and it is thought that reformer Pilates training has a significant effect on university students as a result of the positive effect on life satisfaction in the level of leisure satisfaction. Kinney and Coyle (1992) state that leisure satisfaction significantly increases life satisfaction. In addition, Sneegas (1986) states that leisure satisfaction directly affects life satisfaction. In their study on students, Andrew, Barkley, Karpinski (2014) concluded that there is a low level of positive relationship between the duration of social media use and leisure time satisfaction. Lapa (2013) investigated the relationship between life satisfaction, leisure satisfaction and perceived freedom in leisure time of participants in recreational activities for sports purposes and compared leisure satisfaction with perceived freedom according to certain variables. As a result of the research, it was found that there is a positive linear relationship between life satisfaction and leisure satisfaction. Although the current research results support the relevant literature, we can say that the leisure time satisfaction of female university students who use Reformer Pilates education as a tool for making use of their spare time significantly increases their life satisfaction.

As a result, it is thought that universities play an essential role for the period students spend during their university years, which is a critical period in terms of increasing students' life quality and satisfaction. In line with their social responsibilities, supporting and encouraging students to do social activities, especially physical activity and exercise training, is recommended to make the best of their leisure time. In addition, it is recommended to examine various factors (e.g., income level, perceived body structure, city of residence, academic achievement) that may affect this relationship in future studies.

## **Note**

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