


The Effect of Healthy Life Style Behavior on Psychological Resilience of Associate Degree Students Receiving Health Education After Earthquake


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ABSTRACT	
<p>Corresponding Author Ali GÖDE</p> <p>DOI https://10.48121/jihsam.1489666</p> <p>Received 24.05.2024</p> <p>Accepted 18.07.2024</p> <p>Published Online 27.10.2024</p> <p>Key Words Earthquake, Healthy Lifestyle Behavior, Health Education, Psychological Resilience</p>	<p><i>In this study, it is aimed to understand the effects of the earthquake of February 6 on young individuals, who will be the health workers of the future and who are estimated to be more conscious than the other segments by receiving health education, which significantly affects the level of development of public health. It was aimed to examine the effect of healthy lifestyle behavior on psychological resilience of associate degree students receiving health education after the earthquake. In line with the aim of the study, 428 people, who were determined by convenience sampling method among the students continuing their education and training at the university, constitute the sample of the study and the data were collected by applying an online questionnaire. In the study, "Personal Information Form", "Healthy Lifestyle Behavior Scale II" and "Brief Psychological Resilience Scale" were used. The data were analyzed with SPSS program. In addition, Pearson correlation and regression analyses were applied upon the determination that the data were normally distributed as an analysis method. As a result of the study, it was determined that there was a positive and significant relationship between healthy lifestyle behavior and its sub-dimensions and psychological resilience. In addition, it was determined that healthy lifestyle behavior has a positive and significant effect on psychological resilience. It is predicted that increasing the healthy lifestyle behavior of students after the earthquake will increase their psychological resilience against the disaster in a positive way.</i></p>


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1. INTRODUCTION

Health reflects a certain state at various levels of the human body, especially in psychosomatic, spiritual and motivational aspects. A significant proportion of deaths and illnesses worldwide are preventable. However, the challenges of modern life make it difficult to maintain healthy living habits. Factors such as people's limited time, changes in the environment, increasing traffic density, and how time is spent with the impact of technology cause people to move away from healthy living. This can result in wasting time and energy and can put healthy living on the back burner. For example, changing eating habits, social activities with caffeinated beverages can lead to the spread of unhealthy lifestyles (Tirodimos et al., 2009). Behaviors are the actions that an individual exhibits consciously or unconsciously in daily life. Health behaviors, on the other hand, include all actions aimed at maintaining and improving the level of health (Tambağ, 2013). Therefore, the concept of a healthy lifestyle reflects not only the current state of health, but also the methods of identifying, maintaining and improving lifestyles that enable achieving certain goals in daily life (Bratanich et al., 2022). These methods offer people the opportunity to improve overall health throughout their lives. For example, behaviors such as smoking cessation, reducing alcohol consumption, weight control, stress management, regular sleep habits, personal hygiene, exercise and balanced nutrition can help control health risk factors and improve health (Zaybak & Fadiloglu, 2004; Güzel Ertop et al., 2012; Q. Lu et al., 2022). These basic health behaviors usually start within the family and are then supported by social values and education (Yalçınkaya et al., 2007).

In today's world, life's challenges and stressors are inevitable. This is where psychological resilience comes into play. Psychological resilience is the ability to adapt with flexibility and recover positively when faced with stress, trauma, loss or difficulties (Doğan, 2015; Yavuz, 2023). This concept refers to the ability of individuals to show flexibility against the difficulties of life, to maintain emotional balance and to use positive thinking skills. While it can help individuals to protect and improve their mental health, it can also contribute to societies to exhibit resilience in times of crisis (Levine, 2003). Psychological resilience develops with the interaction of various factors (Shrivastava & Desousa, 2016). Positive thinking, social support, problem-solving skills, emotional awareness and personal empowerment are the cornerstones of psychological resilience. Positive thinking is the ability to develop a more optimistic perspective on challenges and a hopeful view of the future. Social support refers to the ability to build trusting relationships and receive emotional and practical support from others. Problem solving skills

include the process of identifying problems, finding and implementing solutions, while emotional awareness includes the ability to recognize, accept and manage emotions. Personal empowerment refers to the individual's ability to recognize, develop and use their own strengths (Fletcher & Sarkar, 2013; Shrivastava & Desousa, 2016). Psychological resilience is the ability to adapt to the stress and difficulties of life with flexibility and to recover positively. In this way, the individual can help to cope more effectively with all kinds of difficulties brought by life (Fletcher & Sarkar, 2013; Yavuz, 2023)

Natural disasters leave a mark on our lives as one of the most painful and destructive events in human history. Especially earthquakes, with their sudden and unpredictable nature, deeply affect not only the physical environment but also the mental and emotional health of individuals. People living in an earthquake-prone country like Turkey have had to face this reality and are struggling to cope with the psychological effects of earthquakes. On February 6, 2023, at 04:17 in the morning, the whole world was shaken by a major earthquake disaster in the Kahramanmaraş-Hatay-Gaziantep axis of Turkey. The magnitude of the earthquakes was 7.8 and 7.6 9 hours later, with a total of 1,117 aftershocks, both large and small, affecting 11 provinces, causing great destruction and more than 50,000 casualties and property losses (Disaster and Emergency Management Presidency, 2023). Due to its location on the Alpine-Himalayan Earthquake Zone, Turkey witnessed one of the biggest disasters of the last century (Telli Yamamoto & Altun, 2023). In the aftermath of the earthquake, the country's health indicators changed dramatically. In addition to deaths, permanent or temporary disabilities, mental disorders and injuries, problems emerged in areas such as education and job losses, failure to meet basic needs, housing, transportation and communication. In this process, healthy lifestyle behaviors of students who have received health education and who will be health workers in the future, which have a significant impact on the development of public health in this process, can help students to adapt with flexibility and recover positively when faced with stress, trauma, loss or difficulties brought by natural disasters. In this context, it is important to understand the impact of healthy lifestyle behaviors on the psychological resilience of associate degree students receiving health education after the earthquake. Health education programs provide these students with the necessary knowledge and skills to adopt healthy lifestyle behaviors. However, traumatic events such as natural disasters can undermine the psychological resilience of these students and affect their health behaviors.

The aim of the study is to clarify the relationship between health lifestyle behaviors and psychological resilience of associate degree students who received

health education after the earthquake. This study can contribute to making future health education programs more effective by evaluating the impact of traumatic experiences and health education on students' health behaviors and psychological resilience.

2. MATERIALS AND METHOD

2.1. Research Type

In line with the purpose of the study, a quantitative research design was applied by presenting descriptive findings. This research design refers to studies that simply require obtaining and analyzing numerical data. Descriptive research is limited to describing a situation; that is, the results do not include comparisons to explain a specific situation (Büyüköztürk et al., 2013).

2.2. Universe and sample

The population of the study consists of students from Hatay Mustafa Kemal University Vocational School of Health Services. In all departments, the scale questions were applied to the students voluntarily. In addition, convenience sampling method was used to collect the data of the study. Convenience sampling is a non-random sampling method that the researcher selects from the main mass based on predetermined criteria (Küçük, 2016). During the research conducted between 15.04.2023-15.05.2023, it was determined that 1300 students enrolled in the vocational school were continuing their education and training activities. In our research, where we accepted the population as 1300, it was determined that it was sufficient to reach 297 students when the sampling calculation was made within the 95 percent confidence interval (Yazıcıoğlu & Erdoğan, 2004). Between the given dates, 428 students were reached. It was concluded that this number was sufficient as a sample.

2.3. Data Collection Tools

"Personal Information Form", "Healthy Lifestyle Behavior Scale II" and "Brief Psychological Resilience Scale" were used to collect data in the study.

Personal Information Form; A structure consisting of statements such as age, gender, the program they study, class level and the presence of chronic diseases is intended to determine the characteristics of university students.

Healthy Lifestyle Behavior Scale II (HLSB II); The scale was adapted into Turkish by Bahar et al. (2008). The scale has 52 items and includes 4-point Likert-type options (1-never, 2-sometimes, 3-frequently and 4-regularly). The scale consists of six sub-dimensions: "health responsibility", "physical activity", "nutrition", "spiritual development", "interpersonal relationships"

and "stress management". The lowest total score was 52 and the highest total score was 208. The higher the total score, the more healthy lifestyle behaviors the student is considered to have. Reverse coding was not applied in the scale. During the adaptation of the scale, Cronbach Alpha reliability coefficient was observed as 0.780 (Bahar et al., 2008). When the reliability of the scale was analyzed, the Cronbach Alpha reliability coefficient for the overall scale was calculated as 0.938. This reliability value shows that the scale is highly reliable (Kalaycı, 2017; Munro, 2005).

Brief Psychological Resilience Scale; *Brief Psychological Resilience Scale (BSRS)* adapted into Turkish by Doğan (2015) will be used. KPSÖ is a 5-point Likert-type scale consisting of 6 items and is prepared as "1: Strongly disagree-5: Strongly agree". It is a measurement tool for self-evaluation of the individual. A high mean arithmetic score on the scale indicates a high level of psychological resilience. There is reverse coding in questions 2, 4 and 6 in the scale. The Cronbach's Alpha coefficient of the scale translated into Turkish was reported as 0.780 (Doğan, 2015). When the reliability of the scale was analyzed, the Cronbach Alpha reliability coefficient was calculated as 0.842. This reliability value shows that the scale is quite reliable (Kalaycı, 2017; Munro, 2005).

2.4. Data collection and analysis

After obtaining the necessary permissions from the scale owners and the ethics committee, the scale questions were sent to the participants online and the participants were asked to answer voluntarily. The data obtained were analyzed using the SPSS program. Frequency and percentage calculations were made to determine the demographic and descriptive data of the participants (age, gender, department, grade level, chronic disease status, etc.).

It was determined that the healthy lifestyle behavior and psychological resilience data of the students participating in the study did not deviate from the normal distribution. In this context, Pearson correlation, simple linear regression and multiple linear regression analyses were performed to evaluate the role between psychological resilience and healthy lifestyle behavior and its sub-dimensions.

3. RESULTS

In the findings section, the demographic and descriptive data of the participants are first presented in Table 1.

Table 1. Descriptive data on demographic and descriptive characteristics of the research group

Demographic Characteristics	Groups	Number (n)	Percentage (%)
Gender	Female	348	81.3
	Male	80	18.7
Age	18-19 years old	101	23.6
	20-21 years old	236	55.1
	22 years and older	91	21.3
	Anesthesia	66	15.4
Program of Study	First and Emergency Aid	41	9.6
	Medical Imaging Techniques	54	12.6
	Medical Laboratory Techniques	41	9.6
	Medical Documentation and Secretariat	93	21.7
	Aged Care	75	17.5
Grade	Occupational Therapy	58	13.6
	1st Grade	202	47.2
Chronic Illness Status	2nd Grade	226	52.8
	Yes	24	5.6
	No	404	94.4
TOTAL		428	100.00

According to Table 1, the majority of the 428 participants (81.3%) were female and more than half (55.1%) were between the ages of 20-21. Although there are not big differences in the distribution of students according to the departments/programs they study, 21.7% of the students study in the department of medical documentation and secretarial department and 17.5% in the department of elderly care. 47.2% of the participants were 1st year students and 52.8% were 2nd year students. The majority of the participants (94.4%) stated that they did not have a chronic disease.

Normality test results are presented in Table 2 for the scale and sub-dimensions used in the study.

Table 2. Normality test analysis data

Scales and Dimensions	Mean	Sd.	Skewness	Kurtosis
PR	2.90	0.77	-0.111	0.303
HLB	2.33	0.40	0.300	0.286
Health Responsibility	2.20	0.51	0.590	0.467
Physical Activity	2.02	0.54	0.432	0.380
Nutrition	2.15	0.39	0.434	0.626
Spiritual Development	2.69	0.55	0.027	-0.329
Interpersonal Relationships	2.62	0.50	0.162	0.045
Stress Management	2.27	0.49	0.597	0.431

PR: Psychological Resilience; HLB: Healthy Lifestyle Behavior

Considering the data obtained from the participants in Table 2, it was concluded that the Skewness and Kurtosis values of the data were distributed between "-1 and +1" and the data did not deviate from the normal distribution. In line with this result, it was decided to apply parametric analyses in the following analyses (Kalaycı, 2017). In addition, in Table 2, the minimum and maximum mean scores of the scales and sub-dimensions vary between 1 and 5 for the psychological resilience scale and between 1 and 4 for the healthy lifestyle behaviors scale and its sub-dimensions. In this context, it was determined that the mean scores of the participants' psychological resilience and healthy lifestyle behavior were below the average value. The sub-dimensions of healthy lifestyle behavior were also found to be at average level and below average. It is thought that the behaviors of young people in psychological resilience, healthy lifestyle behavior and sub-dimensions are caused by the effects of the earthquake.

Table 3 presents the results of Pearson correlation analysis between psychological resilience and healthy lifestyle behavior and its sub-dimensions. According to these results, there is a statistically significant and positive relationship between psychological resilience and healthy lifestyle behavior and its sub-dimensions ($p < 0.001$). In other words, an increase in the scales or sub-dimensions will cause an increase in psychological resilience ($p < 0.001$).

Table 3. Pearson correlation analysis findings between scales and sub-dimensions

Scales and Dimensions		1	2	3	4	5	6	7	8
1-Psychological Resilience	r	1	.457**	.328**	.336**	.293**	.437**	.328**	.465**
2-Healthy Lifestyle Behavior	r	.457**	1	.819**	.733**	.729**	.855**	.811**	.841**
3-Health Responsibility	r	.328**	.819**	1	.524**	.534**	.613**	.601**	.627**
4-Physical Activity	r	.336**	.733**	.524**	1	.549**	.477**	.427**	.564**
5-Nutrition	r	.293**	.729**	.534**	.549**	1	.518**	.466**	.526**
6-Spiritual Development	r	.437**	.855**	.613**	.477**	.518**	1	.724**	.712**
7-Interpersonal Relationships	r	.328**	.811**	.601**	.427**	.466**	.724**	1	.618**
8-Stress Management	r	.465**	.841**	.627**	.564**	.526**	.712**	.618**	1

**p<0.001, *p<0.05

Table 4. Findings on the effect of healthy lifestyle behavior on psychological resilience

Variable	Unstandardized Coefficients		Standardized Coefficients	t	p	F	Model (p)
	B	Std. Error	β				
Constant	0.835	0.198		4.22	p<0.001		
Healthy Lifestyle Behavior	0.885	0.083	0.457	10.6	p<0.001	112.4	p<0.001

R²: 0.209, R: 0.457, Regression Equation of the Model: Y=0.835+ (0.457X)

In Table 4, simple linear regression analysis was performed to evaluate the effect of healthy lifestyle behaviors on psychological resilience, which is the main objective of the study. According to the results of the analysis, when the F statistic (F: 112.41; p<0.001) indicating that the model is significant and the t statistic (t: 10.60; p<0.001) indicating the significance of the regression coefficients are examined, it is observed that the results obtained are statistically significant. With the statistically significant (R: 0.457; p<0.001) and positive relationship between the variables, the R² value was obtained as 0.209. According to this finding, 20.9% of the variability in psychological resilience is explained by changes in healthy lifestyle behaviors. According to the results of simple linear regression analysis, it was determined that healthy lifestyle

behavior had a positive and significant effect on psychological resilience (β :0.457; p<0.001).

Table 5. The effect of healthy lifestyle behavior sub-dimensions on psychological resilience

Variable	Unstandardized Coefficients		Standardized Coefficients	t	p	F	VIF	Model (p)
	B	Std. Error	β					
Constant	0.972	0.20		4.664	p<0.001			
a) Health Responsibility	-0.019	0.09	-0.013	-0.206	0.837		2.094	
b) Physical Activity	0.129	0.08	0.090	1.616	0.107		1.737	
c) Nutrition	0.004	0.10	0.002	0.037	0.971	22.79	1.726	p<0.001
d) Spiritual Development	0.331	0.10	0.234	3.272	0.001**		2.865	
e) Interpersonal Relationships	-0.075	0.09	-0.049	-0.759	0.448		2.337	
f) Stress Management	0.445	0.10	0.284	4.203	p<0.001		2.547	

Durbin-Watson: 2.029, R²: 0.245, R: 0.495, *p<0.001, **p<0.05

Regression Equation of the Model: Y=0.835 + (0.331d+0.445f)

In Table 5, multiple linear regression analysis was applied to assess the effect of different aspects of healthy lifestyle behaviors on psychological resilience. Durbin-Watson coefficient between 1.5 and 2.5 and Variance Inflation Factor (VIF) coefficients less than 10 indicate that there are no autocorrelation and multicollinearity problems (Büyüköztürk et al., 2013; Kalaycı, 2017). It was found that there was a statistically significant effect between the sub-dimensions of healthy lifestyle behaviors and psychological resilience (F: 22.79; p<0.001). Looking at the regression coefficients, there is no significant effect for health responsibility (t: -0.206; p: 0.837), physical activity (t: 1.616; p:0.107), nutrition (t: 0.037; p:0.971) and personal relationships (t:-0.759; p: 0.448). However, a significant effect was found for spiritual development (t: 3.272; p: 0.001) and stress management (t: 4.203; p<0.001). There was a positive and statistically significant effect between the variables (R: 0.495; p<0.001). The R² value of the ratio of the independent variables explaining the dependent variable of spiritual development and stress management sub-dimensions was calculated as 0.245. This finding shows that 24.5% of the changes in participants' psychological resilience were explained by the spiritual development and stress management sub-dimensions of healthy lifestyle behaviors.

4. DISCUSSION

It was determined that the mean score of psychological resilience (2.90±0.77) and the mean score of healthy lifestyle behavior (2.33±0.40) of the young people participating in the study were closer to the value below the average value. The sub-dimensions of healthy

lifestyle behavior were also found to have average and below average values. Yener Özcan and Ceylan (2023), Lu et al. (2022), Polat (2023) and Demirbilek and Gökkaya (2022) found that the mean scores of psychological resilience on students were above the average level. Beyazgül and Özer (2024), Demireal Bozkurt and Yağız Altınbaş (2021), Köse Tosunöz (2021), Gömleksiz et al. (2020) and Akgün et al. (2021) found that the mean scores of healthy lifestyle on students were at or above the average level. In the research conducted by on 2200 people and Vilovic et al. (2022) on 483 people, it was concluded that Covid-19 pandemic negatively affects health lifestyle and psychological health. Considering other studies in the literature, it is thought that large-scale social events negatively affect students' psychological resilience and healthy lifestyle behaviors.

In the study, a statistically significant and positive relationship was found between psychological resilience and healthy lifestyle behavior and its sub-dimensions (p<0.001). In other words, an increase in the scales or sub-dimensions will lead to an increase in other dimensions. As a result of the research conducted by Nishimi et al. (2022) on 3767 people, psychological resilience predicts that it will eliminate the negative effects on having a healthy lifestyle in young adulthood. In the study conducted by Duan et al. (2024) on 9448 people, a positive relationship between psychological resilience and healthy lifestyle behavior was observed. In the study conducted by Mizmizlioğlu (2018) on 156 health workers, a positive relationship between healthy lifestyle behavior and psychological resilience was determined. In the study conducted by Eren (2023) on 283 people, it was stated that there was a positive relationship between psychological

resilience and quality of life. Similarly, it was concluded in the literature that a change in healthy lifestyle behavior or psychological resilience levels positively increases other levels.

In the study, it was determined that healthy lifestyle behavior had a positive and significant effect on psychological resilience ($\beta:0.457$; $p<0.001$). In addition, the effect of the sub-dimensions of healthy lifestyle behavior on psychological resilience was examined. According to the results, there was no significant effect for health responsibility, physical activity, nutrition and personal relationships ($p>0.05$). However, it was found to have a positive and statistically significant effect for spiritual development and stress management ($p<0.05$). In the study conducted by Liu et al. (2024) on 743 people, it was stated that health-related behaviors had a positive effect on mental health and psychological resilience. In a study conducted by Vilovic et al. (2022) on 483 people during the Covid-19 period, it was concluded that health lifestyle positively supports psychological health. In a study conducted by Cai et al. (2023) on 9250 people in China, it was stated that healthy lifestyles have a positive effect on psychological resilience and longevity. In the study conducted by Köseoğlu Örnek and Kürklü (2017) on 480 students, it is seen that individuals with healthy lifestyle behaviors have reduced psychological health problems such as anxiety and depression. In a study conducted by Demir Uslu et al. (2021) on 303 people, it was stated that healthy lifestyle behavior had a positive effect on happiness. The results of similar studies in the literature show that healthy lifestyle or quality of life has positive effects on people's psychology.

5. CONCLUSIONS AND RECOMMENDATIONS

In the study, it was aimed to examine the effect of healthy lifestyle behaviors on psychological resilience after the earthquake of young individuals, who are assumed to be more conscious than the other segments by receiving health education and who will be the health professionals of the future, which significantly affects the level of development of public health. It was determined that the mean psychological resilience score of the participants was below the average value and the mean score of healthy lifestyle behavior was closer to the minimum value. The sub-dimensions of healthy lifestyle behavior were also found to have average and below average values. It is thought that the psychological resilience, healthy lifestyle behavior and behaviors in sub-dimensions of the young people participating in the research are caused by the effects of the earthquake. The results of this research are important because it draws attention to the fact that their physical, mental and social negative effects may emerge in the future.

In the study, it was determined that there was a statistically significant and positive relationship between healthy lifestyle behavior and its sub-dimensions and psychological resilience in the post-earthquake study of associate degree students receiving health education. This result shows that having a healthy lifestyle can increase the level of psychological resilience and vice versa. In this context, encouraging individuals' healthy lifestyle behaviors can be an effective strategy to increase their psychological resilience.

According to the results of the analysis conducted in line with the main purpose of the study, it was determined that healthy lifestyle behavior had a positive and significant effect on psychological resilience ($\beta:0.457$; $p<0.001$). In addition, the effect of the sub-dimensions of healthy lifestyle behavior on psychological resilience was examined. According to the results, it was determined that spiritual development and stress management sub-dimensions had a significant and positive effect between healthy lifestyle behavior and psychological resilience. No significant effect was found for other sub-dimensions. It reveals that there are differences between the sub-dimensions of healthy lifestyle behavior and that these sub-dimensions have different effects on psychological resilience. Especially spiritual development and stress management sub-dimensions seem to have a significant effect on psychological resilience. Therefore, it is important to develop strategies to increase psychological resilience by focusing on these areas.

The following recommendations can be made in line with the results of the research:

- Health policies and programs should encourage and support healthy lifestyle behaviors of individuals. In particular, programs focusing on areas such as physical activity, nutrition and stress management may be effective.
- Activities and programs that support spiritual development can play an important role in enhancing psychological resilience. Such programs can help individuals meet their spiritual needs and achieve emotional balance.
- It is important to teach young people methods of coping with stress. It can offer stress-reducing techniques such as yoga, meditation, breathing exercises, as well as support groups or counseling services.
- Education and awareness-raising activities should emphasize the importance of healthy lifestyle behaviors and support individuals to adopt these behaviors.

- Healthcare providers should offer counseling and support services to enhance individuals' psychological resilience. These services can focus specifically on stress management and emotional well-being.

Traumatic events such as earthquakes can have serious psychological effects on individuals. However, adopting healthy lifestyle behaviors can help individuals cope better with such stressful situations. It also plays an important role in the development of health policies and intervention strategies. To support post-earthquake communities and increase psychological resilience, health education and information programs are becoming more important. These programs will help individuals adopt healthy lifestyle behaviors and strengthen their psychological resilience. In conclusion, it is clear that post-earthquake healthy lifestyle behaviors have positive effects on psychological resilience. These findings should be taken into account in the planning and implementation of health services and social interventions. Future

studies may contribute to a deeper understanding of this relationship and the development of more effective interventions.

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No

Conflict of Interest:

The authors declare that they have no conflicts of interest

Ethical Approval:

Before the implementation of the study, the approval of the ethics committee was obtained on 07.04.2023 with the decision number 33 of Hatay Mustafa Kemal University Social and Human Sciences Scientific Research and Publication Ethics Committee.

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