

Original Article

The Effect of the Health Promotion Program for Young People on Health Behaviors, Health Perception, and Self-Efficacy Levels: A Randomized Controlled Trial

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Abstract

Background: Health promotion is a process that aims to increase the decision-making power of people on their own health, encourage maintaining positive health behaviors, and improve their own health.

Objective: This study was carried out to determine the effect of the health promotion program intended for university students on healthy lifestyle behavior, health perception, and self-efficacy level of students.

Methodology: This randomized controlled experimental study was conducted with 37 students. “The Health Promotion Program” was applied to the experimental group once a week for eight weeks. The control group was not included in the program. The data were collected from the two groups by using a personal information form, the Healthy Lifestyle Behavior Scale-II, the Perception of Health Scale, and the Self-Efficacy Scale. X2 test, the Mann Whitney U Test, and Wilcoxon Signed Rank Test were used for data analysis.

Results: After the implementation of the health promotion program, there were significant increases in the experimental group compared to the control group in terms of the health responsibility subscale of the Healthy Lifestyle Behaviors Scale, the self-awareness subscale of the Perception of Health Scale and its mean total score, and the mean total score for the Self-Efficacy Scale ($p < 0.05$). In addition, in the final comparison of the experimental and control groups, significant progress was found in the mean score of health responsibility and interpersonal relations subscale of the Healthy Lifestyle Behavior Scale and the mean total score of the Self-Efficacy Scale ($p < 0.05$).

Conclusion: The health promotion program affected health responsibility, interpersonal communication, health perception, and self-efficacy levels of the students positively. It is recommended that students should be supported more by training and counseling services related to healthy lifestyle behaviors.

Keywords: Health Promotion Program, Health Responsibility, Health Perception, Self-Efficacy, University Students

Introduction

Health promotion is a process aiming to increase the decision-making power of people on their own health, encourage maintaining positive health behaviors, and improve their own health. The objective of health promotion is to deliver the right health behaviors first to the individual and then to the masses in the social scale. With health promotion practices, it is important to create awareness on the individual / social scale and then

behavior changes. In the literature, it is emphasized that the areas of application for health promotion programs should be the central positions in schools, workplaces, healthcare organizations or societies and it is reported that health education can be given to children, adults, and families in accordance with its purpose (Fertmann & Allensforth, 2012; Sen et al., 2017; Karaaslan & Celebioglu, 2018). Healthy lifestyle behaviors require the individual to take responsibility for protecting and promoting his/her own health in a physiological and psychosocial

manner. One of the building blocks of the society are university students who are candidates for raising healthy generations and that will take this responsibility. Positive attitudes and behaviors related to health are important factors in improving the quality of life. It is also important to have a positive health perception and correct health protection and promotion behaviors to create a positive effect on the quality of life (Boylu & Pacacioglu, 2016). Therefore, it should be noted that health education of young has a positive impact on increasing health perception and quality of life.

Anthropology is a science dealing with human beings in the broadest sense and studies people in cultural, physical and other dimensions. The starting point of this study is to determine the effect of the health promotion program, administered to first year anthropology students coming from different cultures in a field studying the human and therefore societies and culture, on positive health behaviors, health perception, and the level of self-efficacy. The secondary aim of the study is to raise awareness among students about the importance of developing a positive health perception along with the health promotion program.

Hypotheses H1: The health promotion program has a positive effect on students' healthy lifestyle behaviors, health perception and self-efficacy.

Methodology

Study Design and Sample: This research is a randomized controlled experimental study designed to determine the effect of health promotion program on healthy lifestyle behaviors, health perception, and self-efficacy of students.

The Universe and Sampling of the Study consisted of first year students studying in the Department of Anthropology of the Faculty of Science and Letters in a university in the spring term of 2017-2018 academic year (N = 75). A preliminary value was calculated for the sampling size using the G * Power 3.1 software. The power analysis calculations indicated that a total of 34 (experimental group = 17, control group = 17) participants were necessary to reach a statistical power of 85% with a 0.95 effect size and 0.05 error margin. A total of 38 participants (experiment group = 19, control group = 19) were included in the study, on the grounds that some participants may experience health problems during the study period and may wish to quit due to unforeseen reasons at any stage of the study. In order to ensure homogeneity among the groups, students were

randomly divided into groups according to their gender and age. In the last week of the study, one student from the experimental group wanted to quit the study without specifying any reason. Therefore, the study was completed with a total of 37 students (Figure 1).

Data Collection Tools

Personal Information Form: This form makes an assessment of possible risk factors having an effect on students' socio-demographic characteristics and healthy lifestyle behaviors.

The Healthy Lifestyle Behaviors Scale –II (HLBS): The scale developed by Walker and Hill-Polerecky (1987) was revised in 1996. It evaluates the behaviors that improve the health of the individual and consists of 52 items. Each item is scored from 1 to 4 on a Likert-type scale. The scale has six subscales. The subscales are health responsibility (9 items), physical activity (8 items), nutrition (9 items), spiritual development (9 items), interpersonal relations (9 items) and stress management (8 items), respectively. The scores that can be obtained from health responsibility, nutrition, spiritual development, and interpersonal relations subscales range from 9 to 36, whereas the scores from physical activity and stress management subscales vary between 8 and 32. The scores that can be obtained from the entire scale vary between 52 and 208. The scores indicating an increasing trend show that the individual maintains positive health. The Turkish validity and reliability study of the scale was carried out by Bahar et al. (2008) and the Cronbach α reliability coefficient was calculated as 0.92. The Cronbach α reliability coefficient of the original scale was 0.94. The value in this study was found 0.91.

The Perception of Health Scale: Developed by Diamond et al. (2007), the scale consists of 15 items that evaluate the beliefs, attitudes, and perceptions of individuals affecting their health status. Each item is scored from 1 to 5 on a Likert-type scale of four subscales. The subscales are control center (5 items), precision (4 items), the importance of health (3 items) and self-awareness (3 items), respectively. There are positive and negative expressions in the scale. The scores for the whole scale range between 15 and 75. The validity and reliability study of the scale was carried out by Kadioglu and Yildiz (2012), and Cronbach's α reliability coefficient was found as .77 (Kadioglu & Yildiz, 2012). In this study, Cronbach α value was found as .75.

Figure 1. The systematic presentation of the research plan

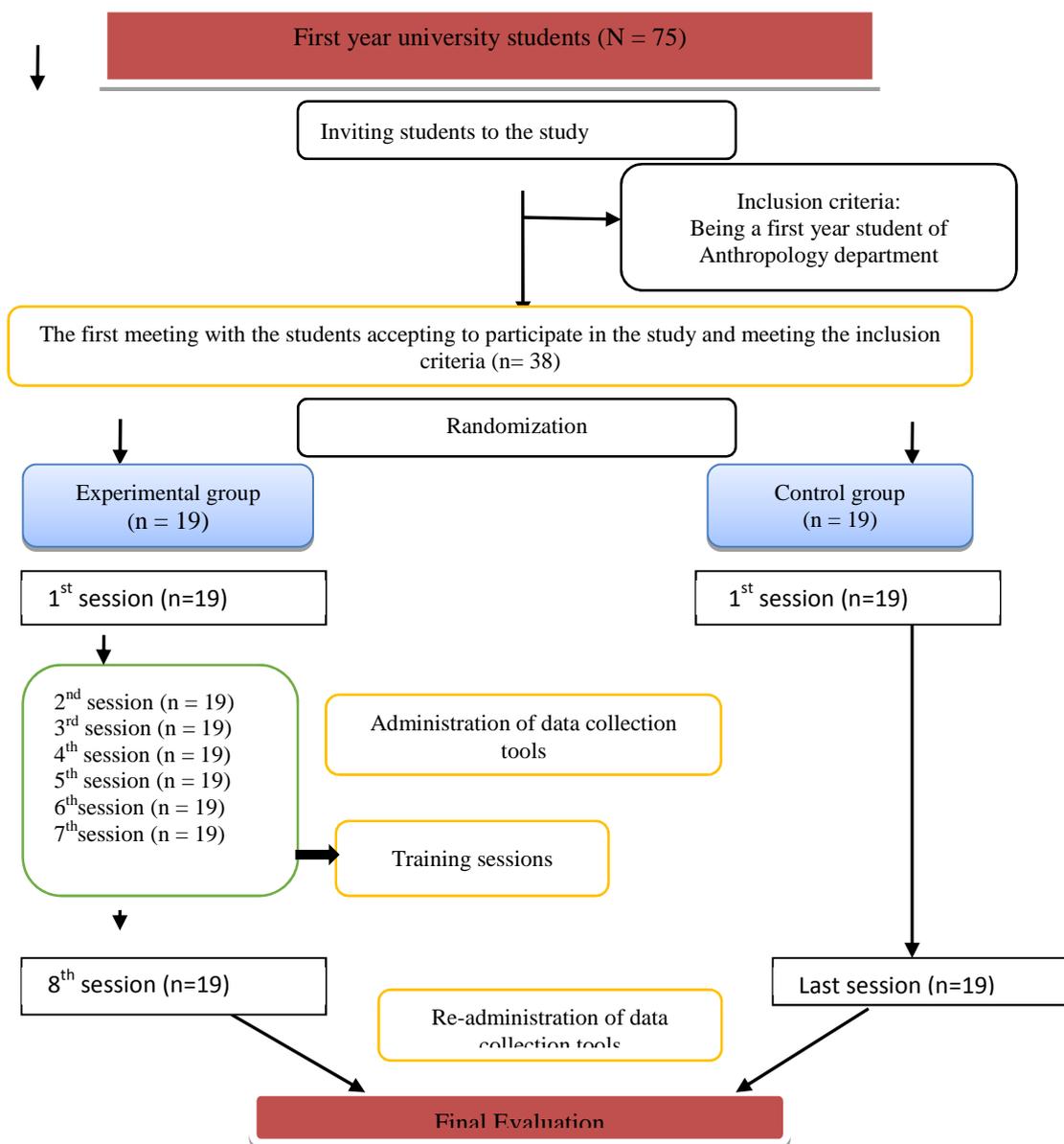


Figure-2 Experimental Group Training

SESSIONS		EXPERIMENTAL GROUP TRAINING
The First Session	<p>“Introduction/Pre-Test Administration”</p> <ul style="list-style-type: none"> At the first meeting, the researchers introduced themselves to the students. The students were given information about the purpose and importance of the study, the confidentiality of the study, how it will be conducted, how long it will take, the gains to be obtained from the study, and the expectations of the researchers. Students' questions were answered and their “informed consents” were taken and the data collection forms were administered to the students. The students were given general information on the headings in the health promotion program and their study, attendance to sessions, and group rules. They were also told that the program would begin the following week and they would be informed about the date and time of the sessions. 	
The Second Session	<p>“Health Responsibility”</p> <ul style="list-style-type: none"> In this session, the sitting order of the students was determined and they were asked to wear their name badges. The aim and objectives of the training are explained. The topics studied in this session were the definition and meaning of health, the concept of health promotion, the conditions affecting health and risk factors, and healthy lifestyle behaviors. 	

The Third Session	<p>“Adequate and Balanced Nutrition”</p> <ul style="list-style-type: none"> The previous session was briefly summarized before starting this session. The session started with the question, “Do you wonder whether you have a healthy diet?” A healthy diet was defined according to the responses. Then the session continued with the following questions: “how many meals a day do you eat?”, and “Do you breakfast?” Based on the answers, the session went on with the following topics: basic food groups, food safety and hygiene, age-appropriate nutrition, and nutrition during disease periods.
The Fourth Session	<p>“Stress Management”</p> <ul style="list-style-type: none"> The previous session was briefly summarized before initiating this session. Then, breathing and relaxation exercises were practiced in the session. The students were taught correct breathing techniques. After that, the session continued with breathing and relaxation exercises while students closed their eyes and dreamed. Students were asked whether they did exercise. Those who did exercise reported what kind of activity they did and stated that exercise was a turning point in their lives. Considering the responses, the session presentation was launched. The topics of this session were the definition of physical activity and exercise, differences between physical activity and exercise, the importance of exercise, and the effects of exercise on health.
The Fifth Session	<p>“Stress Management”</p> <ul style="list-style-type: none"> This session involved the following areas: the definition of stress, changes in the organism during stress, symptoms of stress, factors leading to stress, personal stress sources, and stress control methods. The factors that caused the most stress to the students were discussed through brainstorming technique. The answers from the students were written on the blackboard. A plus (+) sign was placed next to each stressor mentioned for the second time. So, the most stress-causing factor was identified and therefore discussed more. Then, the techniques used to control stress were mentioned.
The Sixth Session	<p>“Interpersonal Relations and Effective Communication”</p> <ul style="list-style-type: none"> The topics such as the definition of communication, forms of communication, principles of healthy communication, effective communication skills, “I” language, and empathy and communication barriers were discussed. In addition, the importance of intercultural communication in education was emphasized. Students, who are already intertwined with culture such as anthropology, paid special attention to intercultural communication and interaction.
The Seventh Session	<p>“Spiritual Development”</p> <ul style="list-style-type: none"> This session focused on the definition and meaning of spirituality, the difference between religion and spirituality, the place and meaning of spiritual needs in our lives, and spirituality as a method of coping. The session started with the question, “What are your sources of motivation in your life?”. The answers from the students were respectively: mother and father love, love for the beloved one, love of God, success, respect, prestige, economic freedom, status, and desired occupation and a good career. According to the answers from the students, the concept of spirituality was explained by the fact that every human being has a spiritual dimension. They all stated that they had not heard the word spirituality before. After that, it was emphasized that the spiritual dimension emerged more in the periods of stress, anxiety and depression and in the processes where diseases and the fear of death accompanying them were experienced.
The Eighth Session:	<p>“General Evaluation/Post-test Administration”</p> <ul style="list-style-type: none"> This session involved a general evaluation where the students provided positive or negative feedback about their training process. After that, all the data collection forms were re-administered.

Figure-3 Control Group Training

SESSIONS	CONTROL GROUP TRAINING
The First Session	<p>Introduction/Pre-test administration</p> <ul style="list-style-type: none"> The first session of the control group was conducted in parallel with the first session of the experimental group. Students' questions were answered and then their “informed consents” were taken. Then, all data collection tools were administered to the students. These students were not included in the health promotion program.
The Second/Last Session	<p>General Evaluation/Post-test Administration</p> <ul style="list-style-type: none"> The last session of the control group was carried out in parallel with the last session of the experimental group

The Self-Efficacy Scale: The scale consists of 23 items evaluating the individual's self-efficacy perception (Sherer et al. (1982). Each item is scored from 1 to 5 on a Likert-type scale. The scale has four subscales. They are the initiation of the behavior (8 items), the persistence of the behavior (7 items), completion of the behavior (5 items), and struggle with obstacles (3 items). The scores for the

initiation of the behavior range from 8 to 40; for the persistence of the behavior, they range from 7 to 35; for the completion of the behavior, they range from 5 to 25; and for the struggle with obstacles, they range from 3 to 15. The scores vary between 23 and 115. Higher scores indicate a high self-efficacy perception. The Turkish validity and reliability study of the scale was conducted by Gozum and

Aksayan (1999). Cronbach α reliability coefficient was found to be 0.81 and test-retest reliability was calculated as 0.92. In this study, Cronbach α was 0.82 and the scale was evaluated on the overall score.

Experimental Group Training: The health promotion program was carried out by a single researcher. 8 sessions were held with the experimental group for two months, which lasted for about 40 ± 5 minutes. The time of the sessions was arranged through phone calls made with faculty members and students. The sessions were held in a suitable classroom of the faculty. The interviews were consistently held in the same classroom large enough to hold an average of 40 students comfortably each sitting at a desk alone. The arrangements of the classroom such as the layout, lighting, projection device, and location of the computer were made by the researcher. PowerPoint slides prepared by the researcher in the light of the related literature were used in the classroom presentations during the training. In some sessions, the blackboard was also utilized. In addition, interactive learning methods such as question-answer, discussion, and brain storming were included in the interviews. The content of the *experimental group training* is listed in Figure-2.

Control Group Training: The control group was interviewed twice for two months. The first and last meetings of the control group were conducted in the classroom where the experimental group was trained. The first and last interviews of the control group were carried out in parallel with those of the experimental group and the data collection forms were administered. The content of the *control group training* is listed in Figure-3.

Ethics of the Study: The study protocol was approved by the Ethics Committee of Mustafa Kemal University, Faculty of Medicine (approval number: 2018/45). Written permission was obtained from the related institution and participants.

Data Analysis: Data were analyzed using SPSS 21.0 (Statistical Package for Social Sciences). Descriptive data were obtained using frequency, percentage, and mean values. Shapiro Wilk distribution test was used to determine whether the data showed normal distribution. Chi-square test, Mann Whitney U test and Wilcoxon Ranked Test were employed. The statistical significance of the data was determined to as $p < 0.05$.

Results

This study was completed with a total of 37 students and the data were evaluated over these

students. The mean age of the experimental group was 22.68 ± 7.24 and the mean BMI was 23.04 ± 4.93 . The mean age of the control group was 21.06 ± 3.11 , and the mean BMI was 22.92 ± 4.16 . There was no significant difference between the groups in terms of gender, educational status of the mother, tobacco use, presence of chronic disease, constant drug use, and persistent exposure to stress ($p > 0.05$, Table 1). When the pretest and posttest mean scores of the experimental group were compared, a statistically significant difference was found between the health responsibility subscale of the HLBS and the self-efficacy subscale of the perception of health scale and its total score and the total scores of the self-efficacy scale ($p < 0.05$) (Table 2).

When the pretest and posttest mean scores of the control group were compared, it was found that there was no significant difference between the total score and subscale scores of the HLBS, the total score of the perception of health scale and subscale scores, and the mean total scores of the self-efficacy scale ($p > 0.05$, Table 3). When the posttest mean scores of the experimental and control groups were compared in the study, a significant difference was found between the mean scores of health responsibility and interpersonal relations subscales of the HLBS and the mean scores of self-efficacy scale ($p < 0.05$, Table 4).

Discussion

The university life is an important process in which young people have serious changes and gains in their lives. Some behavioral gains acquired by young people during this period also guide their later life (Cilingir & Aydın, 2017). In this period, it is very important for student to gain awareness about health protection and promotion behaviors and develop positive health behaviors (Ghanbary et al., 2015). Following the eight-week health promotion training of the experimental group students, significant increases were observed in health responsibility subscale of the HLBS, self-awareness subscale of the health perception scale and its total score, and self-efficacy scale.

Health responsibility is one of the factors that affect healthy lifestyle behavior. Health responsibility is defined as exhibiting health-promoting and developing behavioral changes by an individual for his / her own health. This concept determines the level at which an individual participates in showing positive health behaviors. Individuals with high health responsibility are more likely to maintain positive health behaviors (Bozhuyuk et al., 2012). In the study of Yildirim et al. (2016) which was set

to determine the effect of the health promotion course given to nursing students over 14 weeks, it was reported that health responsibility scores of the students increased after the training. In a study by Stark et al. (2012) was reported that health responsibility scores of the students increased after the training. were given health protection and promotion training. The effects of the training carried out in order to improve health in studies in the field of health sciences and other sciences are known. It is known that there are courses such as health protection and promotion, public health nursing, and health information in the course curriculum of the students, especially in health-related fields.

These courses cover some topics such as the definition of health; physical, social and cultural dimensions of health; healthy lifestyle behaviors; protection and promotion of individual, family, and community health; environmental health, and health education. It is thought that these subjects increased the awareness and health responsibility of the students. In a study of Kostak et al. (2014) contacted on classroom teachers and nursing students, the mean score of nursing students for the health responsibility subscale was higher than that of classroom teachers. For this reason, it is recommended that courses on the health protection and promotion should be added to the curriculum of the students who study in fields outside the health sciences.

Another determinant of healthy lifestyle behaviors is the perception of health. Health perception is defined as a combination of feelings, thoughts, expectations, and prejudices of the individual towards his/her own health. Perception of the health status of the individual affects his/her positive health behavior and health responsibility (Cilingir & Aydın, 2017). Health perception is directly related to the process of health protection and promotion (Ardic & Esin, 2016; Ozdelikara, Alkan & Mumcu 2018). In our study, it was observed that the total health perception scores of the students in the experimental group receiving health promotion education increased. In a study conducted by Kara and İscan (2016), it was reported that the health perception of the individual contributed to gaining and maintaining positive health behaviors. In various studies on this topic, a positive relationship between healthy lifestyle behavior and health perception was mentioned (Acıksoz et al., 2013; Kampf & Goksu, 2013; Ardic & Esin, 2016; Cilingir & Aydın, 2017), and it was emphasized that education increased the perception of health (Kurtuncu, Uzun & Ayoglu, 2015). It was reported

in a qualitative study that the course, “Introduction to Health” affected students’ health perception positively (Clemmens et al., 2004). In this context, the findings of our study were similar to the related research findings. It is thought that students who perceive their health status positively and who have high health perception can control their health status in the future and maintain their positive health behaviors (De-Mateo-Silleras et al., 2018).

Another component affecting both healthy lifestyle behaviors and health perception is self-awareness/self-efficacy. In our study, significant increases were observed in the mean scores of both self-awareness subscale of the perception of health scale and self-efficacy scale following the training in the experimental group. In addition, there was a difference between the mean self-efficacy scores of the experimental and control groups regarding the posttest results. Self-awareness/self-efficacy is defined as the individual's commitment to gaining positive health behaviors and his belief in himself/herself (Bahar & Acil, 2014).

Since high self-efficacy perception initiates and maintains positive health behaviors, it is a powerful element of behavioral change (Gumus Sekerci, 2017), and it is clear that it is effective in planning, implementing, and maintaining positive health behavior (Kulakcı et al., 2012).

Increased self-efficacy perception can be considered as a useful strategy to enhance participation in health-promoting behaviors. In addition, although there are studies showing that there is a positive relationship between self-efficacy perception and healthy lifestyle behaviors (Kulakcı et al., 2012; Gumus Sekerci, 2017), there are also studies reporting that the level of self-efficacy is different in each individual after a training application (Koseoglu, Ornek, & Kurklu, 2017). It is thought that this difference varies by the past experiences, personality traits, and support from the environment.

One of the important factors affecting health is interpersonal relations/ interpersonal communication. In our study, there was a significant difference between the posttest scores of the experimental and control group in favor of the experimental group relating to the interpersonal relations subscale of the HLBS. In their descriptive study on nurses and classroom teachers, Kostak et al. (2014) reported that the highest scores in both occupational groups were obtained from interpersonal support subscale. It was also stated in some other studies that the highest scores were obtained from the interpersonal relations subscale

(Bryer et al., 2013; Nassar & Shaheen, 2014; Kara & İscan, 2016;). Yıldırım et al. (2016) reported that the mean interpersonal relations score of nursing students increased following the training. Supporting relationships are necessary for human life. Interpersonal influences in health promotion behavior show the way how they affect the people around the individual for a positive change.

It was found that after the training of the Anthropology students in this study that there was no significant difference between the students' mean scores for physical activity, nutrition, spiritual development, stress management subscales of the HLBS and control center, precision, and the importance of health subscales of the perception of health scale. This suggests that they were unable to adopt healthy lifestyle behaviors, which are needed to protect their own life. Although the training given to the students can facilitate gaining positive health behaviors, it cannot be effective in the development of time-consuming health behaviors such as physical activity, nutrition, spiritual development, and stress management. This may be due to socioeconomic status, cultural and religious beliefs, family responsibilities, lack of time, personal and environmental barriers (Plotnikoff et al., 2015). Therefore, in order to create behavioral changes, training sessions should be repeated at regular intervals, the curriculum content of the anthropology department should be reviewed, and the courses for health promotion should be involved in the syllabus more. Anthropology students, who take society as a base, will improve the life quality of their families, the society, and themselves by making their healthy lifestyle behaviors a lifestyle.

Conclusion and Recommendations: In this study, it was found that the health promotion program was effective on students' healthy lifestyle behaviors, health perception, and self-efficacy. Therefore, it is recommended that the curricula of departments outside the health sciences should involve health protection and promotion courses. In addition, students' knowledge about healthy lifestyle behaviors should be supported by randomized controlled studies.

The Limitations of the Study: There are a few limitations in this study. First, although this study is one of the rare studies evaluating the effect of the health promotion program on healthy lifestyle behavior, health perception, and self-efficacy, it was conducted only with undergraduate students studying in the Anthropology Department of a university. The second is that the study was conducted on a small samples. Another limitation is

that the study was completed in a shorter time due to the lack of time. Therefore, the findings of the study can be generalized only to this group.

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Place where the work was carried: Hatay Mustafa Kemal University, Department of Anthropology of the Faculty of Science and Letters. Tayfur Sokmen Campus, Alahan, Hatay, Turkey.

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Table 1. Descriptive characteristics of the participants

Characteristics	Experimental Group (n =19)		Control Group (n = 18)		p* value
	Experimental Group (n =19)		Control Group (n =18)		
Mean age	22.68 ± 7.24		21.06 ± 3.11		
Mean BMI	23.04 ± 4.93		22.92 ± 4.16		
	n	%	n	%	
Gender					
Female	4	21.1	5	27.8	0.71
Male	15	78.9	13	72.2	
Educational status of the mother					
Secondary school or below (≤8 years)	15	78.8	11	61.1	0.23
High school or above (≥9 years)	4	21.2	7	38.9	
Educational status of the father					
Secondary school or below (≤8 years)	10	52.5	11	61.1	0.02
High school or above (≥9 years)	9	47.5	7	38.9	
Tobacco use					
Yes	11	57.9	8	44.4	0.62
No	8	42.1	10	55.6	
Presence of a chronic disease					
Yes	2	10.5	3	16.7	0.66
No	17	89.5	15	83.3	
Constant drug use					
Yes	1	5.3	3	16.7	0.34
No	18	94.7	15	83.3	
Persistent exposure to stress					
Yes	5	26.3	6	33.3	0.72
No	14	73.7	12	66.7	
Total	19	100.0	18	100.0	

*Pearson chi-squared test

Table 2. The comparison of the pretest and posttest mean scores of the experimental group

Scales	Pretest		Posttest		Z value	p* value
	X ± SS	Min–Max	X ± SS	Min–Max		
HLBS Subscales						
Health responsibility	20.68±3.55	16 – 27	26.47±3.67	22 – 36	-3.228	0.00
Physical activity	19.78±5.48	13 – 29	22.84±5.20	16 – 33	-1.009	0.31
Nutrition	21.05±4.62	14 – 29	22.73±4.88	15 – 33	-0.706	0.48
Spiritual development	27.89±4.61	20 – 36	27.21±4.62	20 – 36	-0.483	0.62
Interpersonal relations	26.73±3.72	20 – 34	26.47±4.23	19 – 35	-0.121	0.90
Stress management	21.73±4.68	14 – 28	21.15±4.78	14 – 32	-0.493	0.62
Total	137.89±20.27	105 – 176	146.89±22.07	115 – 204	-0.926	0.35
Subscales of the Perception of Health Scale						
Control center	16.94±4.71	7 – 23	17.26±3.87	10 – 25	-0.284	0.77
Precision	12.21±3.48	8 – 20	12.89±2.60	8 – 18	-0.688	0.49
Self-awareness	8.42±2.61	3 – 12	12.94±1.50	10 – 15	.3.537	0.00
Importance of health	12.05±2.24	8 – 15	11.26±3.12	3 – 15	-0.878	0.38
Total	49.63±5.94	39 – 62	54.36±5.57	46 – 65	-2.006	0.04
Self-efficacy scale	81.57±10.56	62 – 97	92.73±12.45	69 – 109	-2.461	0.01

X: Mean, SS: Standard Deviation, Min: Minimum, Max: Maximum *Wilcoxon Ranked Test

Table 3. The comparison of pretest and posttest mean scores of control group scales

Scales	Pretest		Posttest		Z value	p* value
	X ± SS	Min– Max	X ± SS	Min– Max		
Subscales of HLBS						
Health responsibility	19.44±4.80	11 – 26	21.11±6.12	9 – 34	-0.854	0.393
Physical activity	19.16±5.37	8 – 29	20.61±5.68	9 – 31	-0.776	0.438
Nutrition	20.16±4.17	10 – 29	22.77±4.72	16 – 32	-1.656	0.098
Spiritual development	25.94±5.31	17 – 35	25.33±5.59	16 – 36	-0.218	0.828
Interpersonal relations	24.83±4.97	16 – 34	23.50±4.97	16 – 35	-0.830	0.407
Stress management	19.55±4.30	10 – 26	20.55±5.02	14 – 29	-0.440	0.660
Total	129.11±23.83	74 – 165	133.88±29.56	80 – 197	-0.426	0.670
Subscales of the Perception of Health Scale						
Control center	15.50±4.39	7 – 21	14.38±5.51	5 – 25	-0.698	0.485
Precision	12.55±3.36	4 – 20	11.72±1.99	9 – 18	-0.784	0.433
Self-awareness	11.66±2.47	8 – 15	10.44±2.40	6 – 15	-1.141	0.254
Importance of health	11.38±2.47	7 – 15	10.83±3.11	5 – 15	-0.333	0.739
Total	51.11±7.80	38 – 71	47.38±8.81	36 – 67	-1.307	0.191
Self-efficacy scale	83.88±11.21	67– 99	76.72±13.72	53 – 103	-1.801	0.072

X: Mean, SS: Standard Deviation, Min: Minimum, Max: Maximum *Wilcoxon Ranked Test

Table 4. Posttest mean scores of the scales for the experimental and control group

Scales	Experimental Group		Control Group		Z value	p* value
	X ± SD	Min– Max	X ± SD	Min– Max		
Subscales of HLBS						
Health responsibility	26.47±3.67	22 – 36	21.11±6.12	9 – 34	-2.918	0.00
Physical activity	22.84±5.20	16 – 33	20.61±5.68	9 – 31	-0.944	0.34
Nutrition	22.73±4.88	15 – 33	22.77±4.72	16 – 32	0.000	1.00
Spiritual development	27.21±4.62	20 – 36	25.33±5.59	16 – 36	-0.975	0.33
Interpersonal relations	26.47±4.23	19 – 35	23.50±4.97	16 – 35	-2.107	0.03
Stress management	21.15±4.78	14 – 32	20.55±5.02	14 – 29	-0.442	0.65
Total	146.89±22.07	115 – 204	133.88±29.56	80 – 197	-0.658	0.53
Subscales of the Perception of Health Scale						
Control center	17.26±3.87	10 – 25	14.38±5.51	5 – 25	-0.429	0.66
Precision	12.89±2.60	8 – 18	11.72±1.99	9 – 18	-0.575	0.56
Self-awareness	12.94±1.50	10 – 15	10.44±2.40	6 – 15	-1.308	0.19
Importance of health	11.26±3.12	3 – 15	10.83±3.11	5 – 15	-0.417	0.67
Total	54.36±5.57	46 – 65	47.38±8.81	36 – 67	-1.348	0.17
Self-efficacy scale	92.73±12.45	69 – 109	76.72±13.72	53 – 103	-3.147	0.00

X: Mean, SS: Standard Deviation, Min: Minimum, Max: Maximum *Mann Whitney U Test