www.ijemst.net

High School Students' Views on Developing Health Behaviours and Health Education

Evrim Sütçü
Hacettepe University, Turkiye

Miraç Yılmaz
Hacettepe University, Turkiye

To cite this article:

Sutcu, E. & Yilmaz, M. (2025). High school students' views on developing health behaviours and health education. *International Journal of Education in Mathematics, Science, and Technology (IJEMST), 13*(1), 97-120. https://doi.org/10.46328/ijemst.4475

International Journal of Education in Mathematics, Science and Technology

2025, Vol. 13, No. 1, 97-120 https://doi.org/10.46328/ijemst.4475

High School Students' Views on Developing Health Behaviours and Health Education

Evrim Sütçü, Miraç Yılmaz

Article Info

Article History

Received:

07 March 2024

Accepted:

11 September 2024

Keywords

Factors affecting health

Health

Health education

High school, student.

Abstract

The purpose of this study is to analyse high school students' views on developing health behaviours and health education. In the study in which the qualitative method was used, the study group consisted of 26 students. Descriptive and content analysis was applied to the student views. 19% of the students stated that they have never done healthy living activities in recent days and that the factors of the individual are mostly effective on their health (46%). However, the students who stated that environspiritual factors such as family/friends, diseases, economy and nutritional conditions affect their health at a rate of 65% mostly talk about environspiritual barriers (56%). In order to take care of their health, they stated that they expect support from their close circles such as friends and family, who have the lowest health knowledge (70%). It is noteworthy that 33% of the students stated that there is no need for education to be healthy. In order for health education to be effective, they emphasized experts and teaching methods (71%). The results obtained in the research, although students believe that their individual strengths should be effective on their health, they mostly state that environmental factors affect their health status.

Introduction

As decision-makers of the future, the youth must be encouraged to consciously question the crucial problems of today such as the climate, infectious diseases, preparation for natural disasters, biodiversity loss, agricultural harvest, food security, and the migration crisis. That is because the definition of human welfare includes having basic structures required for a good life such as safe and adequate sources of income, adequate food, safe shelter, access to clothing and goods, as well as having a healthy physical environment. The notion of health, which contains all the previous aspects, also includes the freedom of an individual to choose and act, such as good social relations, secure access to all resources, natural or otherwise, personal security, protection from natural or human-caused disasters, opportunities of success in what they value doing and being (Hassan et al., 2005; quoted in Charron, 2012).

The definition of health in the Constitution of the World Health Organization was expanded in 1948, not only

referring to not having diseases or infirmity, but also to a situation of physical, spiritual, and social welfare (World Health Organisation [WHO], 1948). According to another definition, health is more a dynamic and relative condition, a capacity or a resource, rather than a state (PHAC 1996; quoted in Charron, 2012). There is also a dynamic interaction between external conditions, in other words, the determinants of health, and health results. The determinants of health are the environmental, spiritual and socio-economic factors associated with health results and they include the external factors which do not affect the direct causes of diseases: natural disasters like earthquakes and floods, physical environment, pollution, pathogens, level of income, and health education. Moreover, apart from the external determinants, individuals also need to take responsibility for their own health (Ardic & Esin, 2015). Schwarzer and Renner (2000) highlight that in order for health applications to be adopted, the potential impacts of self-efficacy on initiating a behavioural change in the individual should be evaluated and the association with certain health-related behaviours should be researched. That is why, there is a necessity for health-improving applications and education, which could develop individuals' control over health-related behaviours and help them adopt positive health-related practices. Daniel (2020) argues that receiving rapid and effective support from the health systems and health education is necessary to cope with the ethical, social, and economic consequences brought about by the COVID-19 pandemic since 2019. Studies conducted on improving health-related behaviour, particularly emphasize factors that affect behavioural change. As such, many existent theories (planned behaviour, maintaining/changing motivations, social cognitive theories) and models (health belief model, health developing model, transtheoretical behaviour change model) contribute to health-related behavioural change (Bas & Donmez, 2009). One of the recent models, HAPA (Health Action Process Approach), creates a theoretical basis incorporating multiple psychological and other factors to explain, predict, and attempt to amend health-related behaviours (Schwarzer, 2016).

In Türkiye, the Ministry of Health has been establishing new units for the improvement and incentivization of health, as well as working together with the primary healthcare services and popular education organizations toward preventative approaches by raising public awareness and determining prior risk factors that cause diseases to take precautions with the purpose of improving health (Ministry of Health, 2011). However, according to Özvarış (2016:64), the role of educator given to the doctors or the health personnel such as the nurses working in primary healthcare services is becoming more and more complex. Health education is becoming more of a field requiring specific expertise. This highlights the role of schools and teachers in health education. In Türkiye, health education was updated with the Health Knowledge and Traffic Culture Curriculum in 2018, and the course is taught for an hour per week in Turkish high schools (Ministry of National Education, 2018a, 2018b).

The development of health programs in schools to allow the acquisition of positive health-related behaviour necessitates the determination of health-related knowledge and points of view of adolescents, the determination of behaviours enabling better health and their underlying factors, and the evaluation of health education. Regarding that, Takmaz and Yılmaz (2019) insist on the importance of developing programs through student involvement, who are the recipients of teaching. In this context, to improve positive health-related behaviour among the youth, it is crucial that their health-related perceptions be taken into consideration in the name of helping them realize their healthy behaviours and increasing their health/well-being beliefs. The purpose of this study is to analyse high school students' views on developing health behaviours and health education.

Research Problem

The main problem of this research is what are the views of high school students about development of health behaviours, health education and how their views are distributed.

Sub Problems

1. What are the student views and the distributions on “what does the concept of health mean to you?”
2. What are the student views and the distributions on “what do you think of when you say healthy living activities/behaviours?”
3. What are the student views and the distributions on “have you done these healthy activities lately, which of these healthy activities have you done lately?”
4. What are the student views and the distributions on “which of the wellness activities will you do in the coming days?”
5. What are the student views and the distributions on “which factors are effective on the individual's own effect on being healthy?”
6. What are the student views and the distributions on “what affects and hinders your not taking care of your health?"
7. What are the student views and the distributions on “whom (family, friends, teachers, experts, sports coach, dietitian) and what kind of support would you expect to take care of your health?”
8. What are the student views and the distributions on “do you think you need education to be healthy and how do you think an effective training would be for you to be healthy?

Method

This research uses a qualitative methodology, through which a deeper, multi-faceted understanding and a revelation of high school students’ views on health is aimed.

Sample Group

26 students constitute the sample group for this quantitative study, also given the satiety of the data. Teddlie and Tashakkori (2009) show that the choice of sample in the quantitative domain has to do with the satiety of data obtained. Among the 26 students, 14 are women and 12 are men (see Table 1). For the quantitative data collection, students from each grade were selected randomly. Table 1 shows that 53.8% of the participants are women, and 46.2% are men. 19.2% of the participants are in the 9th grade and the same percentage of students are in the 10th grade. 30.7% are in the 11th grade and 30.7% are in the 12th. With the grading system out of 5 where 5 is the highest grade, 15.4% of the students got a 3 as their science/biology grade, 38.5% got a 4, and 46.1% got a 5. The education level of the participants’ mothers is as follows: 26.9% have been to elementary school, 50% have graduated from high school, 23.1% are university graduates and none of them have a postgraduate degree. The education level of the participants’ fathers is as follows: 7.6% have been to elementary school, 42.3% have

graduated from high school, 46.1% are university graduates and 3.8% of them have a postgraduate degree. Analyzing the socio-cultural background, none of the participants are from the bottom group, 3.8% are below the median, 80.7% belong to the median group, 15.3% are above the median, and none of them are from the top group. Looking at the economic background, none of the students belong to the bottom group, 15.3% are below the median, 73.0 are from the median group, 11.5 are above the median, and none of them are from the top group.

Table 1. Personal Characteristics of the Students in the Quantitative Study

Characteristics	Sub Groups	N	%
Gender	Female	14	53.8
	Male	12	46.2
Class	9th Grade	5	19.2
	10th Grade	5	19.2
	11th Grade	8	30.7
	12th Grade	8	30.7
Science/Biology Grade	1	0	0.0
(Out of 5; 5 is the highest)	2	0	0.0
	3	4	15.4
	4	10	38.5
	5	12	46.1
Mother's Level of Education	Elementary school	7	26.9
	High school	13	50.0
	Bachelor's	6	23.1
	Master's/PhD	0	0.0
Father's Level of Education	Elementary school	2	7.6
	High school	11	42.3
	Bachelor's	12	46.1
	Master's/PhD	1	3.8
Socio-Cultural Background	Bottom	0	0.0
	Below the median	1	3.8
	Median	21	80.7
	Above the median	4	15.3
Economic Background	Bottom	0	0.0
	Below the median	4	15.3
	Median	19	73.0
	Above the median	3	11.5
	Total	26	100

Data Collection Tools

To evaluate students' views on health, the researchers have developed a semi-structured "Student Health-Related

Interview Form". The personal information found in the first part of the student form contains the variables of "gender", "grade", "science/biology grade from the previous semester", "mother's level of education", "father's level of education", "socio-cultural background", and "economic background". In the second part, there are 8 interview questions on the concepts of health and healthy life activities for views on health, doing healthy life activities, factors affecting health, getting support for being healthy and getting health education. The questions were expressed in the research problems section.

Data Collection Process

Considering student density and ease of transportation, 7 central districts of Ankara (Çankaya, Yenimahalle, Keçiören, Mamak, Etimesgut, Sincan, and Altındağ) were selected for data collection. Required permissions were obtained from the Ethical Council of Hacettepe University and the Provincial Directorate of National Education in Ankara. Due to the participant students being minors under 18, the "Voluntary Participation Form" and the "Parental Consent Form" were sent and they were signed. The data collection was conducted on a period far from exams, to ensure a healthier set of responses to the questions.

Before the study, the researcher introduced themselves to the students and talked to the students about the purpose of this research. Due to the pandemic situation during the study, the parents and the participating students were contacted through channels of communication (e-school system, e-mail, texts, and/or web-based applications, etc.), under the guidance of high school administrators. Interviews were conducted with the students through remote digital applications (Zoom) and in person. Vocal and video calls were not recorded; a calm medium where the participant and the researcher had one-on-one interaction was prioritized. Before the interview, the participants were informed about privacy, and they were assured that this information would not be shared anywhere other than the research itself.

Ethical Permission

Ethical permission for this research was taken from the Hacettepe University Ethics Committee (Date: 16.02.2021, No: E35853172-300-00001450313). Informed consent was obtained from all individual participants participating in the research.

Data Analysis

In order to determine common themes, the views obtained from students using the data collection tool were subjected to descriptive and content analysis. During the content analysis, the data obtained from the students were analysed and significant expressions were put under different codes. To ensure a framework, similar codes were regrouped under common themes. The frequency of the codes was determined and distribution percentages were obtained. Some views subjected to content analysis will be directly presented in the following sections to give the reader a better understanding. In these citations, student views are presented with abbreviations like "S15". Here, "S" represents the students, and "15" is the survey number for that student.

Trustworthiness

Due to the highly subjective nature of qualitative studies, reliability is crucial to establish. The notion of trustworthiness becomes significant here. In this research, the trustworthiness approach is used in the description of criteria and techniques to increase the quality. Two researchers codifying the same data could yield important results on what is common and what is in disagreement, bringing forward a common vision (Arastaman, Öztürk Fidan & Fidan, 2018). For the purpose of reliability, to make the results obtained by this study accurate and repeatable, the survey questions were mentioned explicitly. Moreover, in order to minimize the partiality during the study, the content analysis and codification were conducted by different researchers using the "analysis by different researchers" method. The statements expressing student views were analysed by two different researchers (the researcher and the supervisor), where similar codes were accepted as "agreement" and different codes were accepted as "disagreement". Codes of "disagreement" were put into discussion to get a common understanding (Miles & Huberman, 1994). After the codification, the rate of consistency calculated through Miles' and Huberman's (1994) reliability formula, "agreement / (agreement + disagreement) x 100" should yield at least 80%. The result of the formula for our study shows that the consistency between the codifying researchers was 93%.

Results

The views of high school students (N=26 people) regarding the notion of health, obtained by semi-structured interviews, were analysed using qualitative content analysis. As such, the content analysis for the stated views is shown below in the tables (Table 1 - 10 and Figures 1 - 2).

High School Students' Views on the Question "What does the concept of health mean for you?"

The content analysis of the students' views on the question "What does the notion of health mean to you? Could you please define it?" is shown in Table 2.

Table 2. The Distribution of Students' Views to the Question: "What does the notion of health mean to you?"

Theme	Code	f	%
Well-being	Physical well-being	7	33.33
	Psychological well-being	7	33.33
	Social well-being	1	4.76
	Total	15	71.42
Doing Healthy Life Activities	Hygiene	1	4.76
	Personal care	1	4.76
	Sports	1	4.76
	Nutrition	1	4.76
	Getting fresh air	1	4.76
	Water consumption	1	4.76

Theme	Code	f	%
	Total	6	28.56
	General Total	21	100%

Within the content analysis of the students' views regarding the notion of health, the question "What does the notion of health mean to you?" can be divided into two themes: "Well-being" (71.42%), and "Doing healthy lifestyle activities" (28.56%). The "Well-being" theme is made up of three codes: " physical well-being", "psychological well-being", and "social well-being". Seven students expressed their views on "physical well-being", seven students expressed their views on "psychological well-being", and one student expressed their views on "social well-being". Accordingly, the theme of "well-being" was distributed with a rate of 71.42%. Sample expressions highlighting the views on this theme are shown below:

S6: "[It is] to take good care of oneself."
S16: "[It is] the state of physical, psychological, and social well-being. This was previously asked on a written exam, I had learned it well."
S26: "It means for the body and the mind to run like clockwork."

The theme "doing healthy lifestyle activities" is made up of six codes: "Hygiene", "personal care", "sports", "nutrition", "getting fresh air", and "water consumption". These six codes were mentioned by one student each. Accordingly, the theme of activities for a healthy lifestyle was distributed with a rate of 28.56%. Sample expressions highlighting the views on this theme are shown below:

S13: "Diseases and a healthy diet come to my mind, among many other things. Even getting fresh air has to do with health."
S25: "A good, healthy, and proper diet."
S25: "We should mention water. Water is life."

High School Students' Views on the Question "What do you associate with activities/behaviours for a healthy lifestyle?"

The content analysis of the students' views on the question "What do you associate with activities/behaviours for a healthy lifestyle? Could you please explain?" is shown in Table 3.

Table 3. The Distribution of Students' Views to the Question: "What do you associate with activities/behaviours for a healthy lifestyle? Could you please explain?"

Theme	Code	f	%
Physical well-being	Sports	18	29.5
	Nutrition	17	27.87
	Sleep	4	6.56
	Taking precautions against diseases	4	6.56

Theme	Code	f	%
	Drinking water	2	3.28
	Staying away from harmful habits	2	3.28
	Total	47	77.05
Social well-being	Socializing	5	8.19
	Total	5	8.19
Psychological well-being	Meditation	4	6.56
	Hobbies	1	1.64
	Staying away from stress	4	6.56
	Total	9	14.76
	General Total	61	100%

Through the analysis of the views to the question "What do you associate with activities/behaviours for a healthy lifestyle? Could you please explain?", three themes appear: "physical well-being", "social well-being", and "psychological well-being". Physical well-being is made up of six codes: "sports", "nutrition", "sleep", "taking precautions against diseases", "drinking water", and "staying away from harmful habits". 18 students expressed views on "sports", 17 students on "nutrition", four students on "sleep", four students on "taking precautions against diseases", two students on "drinking water", and two students on "staying away from harmful habits". Accordingly, the theme of "physical well-being" was distributed with a rate of 77.05%. Sample expressions highlighting the views on this theme are shown below:

> *S22: "Regular sleep, a healthy diet, taking precautions against infectious diseases, staying away from stress. I feel less stressed in the mornings when I wake up early."*
> *S24: "Nutrition and doing sports."*
> *S26: "Having a proper routine of diet and being physically active. Drinking plenty of water, having a diet with fruits and vegetables, doing yoga, going for walks."*

High School Students' Views on the Question "Have you done these healthy activities lately, which of these healthy activities have you done lately?

The content analysis of the students' views on the questions "Have you done these healthy activities lately, which of these healthy activities have you done lately?" are in figure 1 and Table 4 below. The students' views about "Have you done these healthy activities lately?" is in Figure 1. According to Figure 1, 81% of the students answered "yes", and 19% of them said "no".

The students' views about "Which of these healthy activities have you lately done?" is shown in Table 4. Two themes appear among the views to the question "Which of these healthy activities have you recently done?" physical well-being activities (93.33%) and psychological well-being activities (6.67%). There has been no mention of social well-being activities for this question.

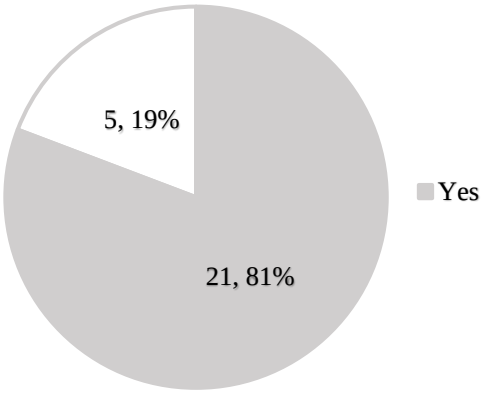

Figure 1. The Distribution of Students' Views to the Question "Have you done these healthy activities lately?"

Table 4. The Distribution of Students' Views to the Question: "Which of these healthy activities have you lately done?"

Theme	Code	f	%
Physical well-being activities	Sports	16	53.33
	Nutrition	7	23.33
	Sleep	5	16.67
	Total	28	93.33
Psychological well-being activities	Staying away from stress	2	6.67
	Total	2	6.67
	General Total	30	100%

The "physical well-being activities" theme is made up of three codes: sports, nutrition, and sleep. "Sports" was mentioned by 16 students, "nutrition" by seven students, and "sleep" by five students. The theme of "physical well-being" stands out with 93.33% of the distribution. Sample expressions highlighting the views on this theme are shown below:

S4: "We are careful about our diet because of my mother. Due to COVID I cannot do a lot of sports. Normally we go out for a walk or a run."
S13: "Due to the pandemic we haven't been going out. Normally, I walk to school and thus walk every single day. But right now, the most I do is do leg exercises while reading. I have a good sleep routine; I sleep for 8 hours. Our diet is also good."
S22: "I go for regular walks, and pay attention to my sleep and nutrition."

The "psychological well-being activities" theme consists of the code of "staying away from stress" and two students have expressed views on this code. Accordingly, the theme of "psychological well-being" was distributed with a rate of 6.67%. A sample expression highlighting the views on this theme is shown below:

S21: "I am on a diet. I also do sports. I am staying away from stress as much as I can."

High School Students' Views on the Question "Which of these healthy activities would you do in the upcoming days?"

The content analysis of the students' views on the questions "Which of these healthy activities would you do in the upcoming days?" is shown in Table 5.

Table 5. The Distribution of Students' Views to the Question: "Which of these healthy activities would you do in the upcoming days?"

Theme	Code	f	%
Physical activity	Sports (Zumba, swimming, football etc.)	8	57.14
	Nutrition (Decreasing coffee consumption)	5	35.71
	Total	13	92.85
Social activity	Staying away from harmful people	1	7.15
	Total	1	7.15
	General Total	14	100%

Through the analysis of the views to the question "Which of these healthy activities would you do in the upcoming days?", two themes appear: "physical activity" and "social activity". "Physical activity" consists of two codes, "sports (zumba, swimming, football)" and "nutrition (decreasing coffee consumption)". Eight students have expressed views on "sports (zumba, swimming, football)" and five students have expressed views on "nutrition (decreasing coffee consumption)". Accordingly, the code of "sports (zumba, swimming, football)" has a distribution rate of 51.14%, and "nutrition (decreasing coffee consumption)" has a distribution rate of 35.71%. The total distribution rate for "physical activity" theme is 92.85%.

Sample expressions highlighting the views on this theme are shown below:

S3: "I will have a more protein-heavy diet."
S8: "I want to play basketball."

The theme of "social activity" consists of a single code, "staying away from harmful people". One student has expressed views on "staying away from harmful people". Accordingly, the distribution rate for the "social activity" theme and "staying away from harmful people" code is 7.15%. A sample expression highlighting the views on this theme is shown below:

S6: "I will stay away from harmful people."

High School Students' Views on the Question "Which factors are effective in being healthy?"

The content analysis of the students' views on the questions "which factors are effective in being healthy?" is shown in Table 6.

Table 6. The Distribution of Students' Views to the Question: "Which factors are effective in being healthy?"

Theme	Code	f	%
The Environment	Diseases	3	17.65
	Close People (Friends, Family)	4	23.53
	The Economy	2	11.76
	Nutritional conditions	2	11.76
	Total	11	64.70
The Individual	Wanting something	5	29.41
	Intention	1	5.88
	Total	6	35.29
	General Total	17	100%

For the second part of the question, "Could you please elaborate?" the students gave details about the factors they had mentioned. The factors grouped under the two themes of "the individual" and "the environment", had a distribution of 35.29% and 64.70%, respectively. The theme of "the environment" consists of four codes: "diseases", "people (friends, family)", "the economy", and "nutrition". Three students expressed views on "diseases", four on "people (friends, family)", two on "the economy", and two on "nutrition". Accordingly, the distribution of the codes is 17.65% for "diseases", 23.53% for "people (friends, family)", 11.76% for "the economy", and 11.76% for "nutrition".

Sample expressions highlighting the views on this theme are shown below:

S10: "External factors are influential; I don't think I can be happy in Türkiye."
S13: "External factors are more important, the economy is bad, if there is a shortage of food how will I feed myself?"
S20: "70% is external factors, and 30% is due to me. We gather with my friends and do activities together. When I consider the economy, [external factors] add up to 70%."

The theme of "the individual" consists of two codes, "wanting something" and "volition". Five students expressed views on "wanting something" and one student expressed views on "volition". Accordingly, the distribution for the codes is 29.41% for "wanting something" and 5.88% for "volition". "The individual" adds up to 35.29% of the distribution.

Sample expressions highlighting the views on this theme are shown below:

S15: "The individual themselves matter more, if I want to do it, I can."
S21: "The individual accounts for 60%, and external factors are 40%. [For instance] eating fast food is an external factor, but not being lazy is something we can do."
S24: "It is 100% related to the individual. It is about intention. There is sports equipment even in parks."

High School Students' Views on the Question "What factors may prevent you from taking good care of your health? What may be the constraints?"

The content analysis of the students' views on the questions "What factors may prevent you from taking good care of your health? What may be the constraints?" is shown in Table 7.

Table 7. The Distribution of Students' Views to the Question: "What factors may prevent you from taking good care of your health? what may be the constraints?"

Theme	Code	f	%
Individual	Nutrition	7	16.28
	Video games/Social Media	3	6.98
	Infectious Diseases	3	6.98
	Time Management	3	6.98
	Volition	2	4.65
	Sleep	1	2.33
	Total	19	44.20
External	Friends	9	20.93
	Family	5	11.63
	Economy	5	11.63
	Stress /Uncertainty	4	9.30
	Hereditary Diseases	1	2.33
	Total	24	55.80
	General Total	43	100%

Through the analysis of the views to the question "What factors may prevent you from taking good care of your health? What may be the constraints?" two themes appear: "individual" and "external". The theme of "individual" factors consists of 6 codes, "nutrition", "video games/social media", "infectious diseases", "time management", "volition", and "sleep". Seven students expressed views on "nutrition", three on "video games/social media", three on "infectious diseases", three on "time management", two on "volition", and one on "sleep". Accordingly, the distribution of the codes is 16.28% for "nutrition", 6.98% each for "video games/social media", "infectious diseases", and "time management", 4.65 for "volition", and 2.33% for "sleep". Thus the "individual" accounts for 44.20% of the distribution in total. Sample expressions highlighting the views on this theme are shown below:

S8: "The mirror, my friends, hamburger."
S15: "Sleep and video games constrain me."
S24: "I am a lazy person; I don't want to come up with other excuses."

The theme of "external" factors consists of five codes: "friends", "family", "economy", "stress/uncertainty", and "hereditary diseases". Nine students expressed views on "friends", five on "family", five on "the economy", four on "stress/uncertainty", and one student on "hereditary diseases". Accordingly, the distribution of the codes is

20.93% for “friends”, 11.63% each for “family” and “economy”, 9.30% for “stress/uncertainty”, and 2.33% for “/hereditary diseases”. Thus the “external” accounts for 55.80% of the distribution in total. Sample expressions highlighting the views on this theme are shown below:

S6: “My friends and having problems with them.”
S17: “Türkiye, the economic situation, family, it could be anything.”
S25: “Time, I would say.”

High School Students' Views on the Question “In order to take good care of your health, from whom and what kind of support would you expect?”

The content analysis of the students’ views on the questions “In order to take good care of your health, from whom (family, friends, teachers, experts, sports coach, dietitian) and what kind of support would you expect?” which appears in the semi-structured interview form on the notion of health, are explained through two tables (Table 8 and 9).

The students’ views about first part of the question, “In order to take good care of your health, from whom (family, friends, teachers, experts, sports coach, dietitian)” and what kind of support would you expect?*”* shown in Table 8.

Table 8. The Distribution of Students’ Views to the Question: “In order to take good care of your health, from whom would you expect support (family, friends, teachers, experts, sports coach, dietitian?)”

Theme	Code	f	%
High level of health-related knowledge	Experts (Sports coach, psychologist, dietitian, doctor)	10	23.26
	Total	10	23.26
Medium level of health-related knowledge	Teachers	3	6.98
	Total	3	6.98
Low level of health-related knowledge	Friends	16	37.21
	Family	12	27.91
	Economist	1	2.33
	Influencers	1	2.33
	Total	30	69.78
	General Total	43	100%

Through the analysis of the views to the question “In order to take good care of your health, from whom would you expect support (family, friends, teachers, experts, sports coach, and dietitian?)”, three themes appear: “High level of health-related knowledge”, “Medium level of health-related knowledge”, and “Low level of health-related knowledge”. For the theme of “High level of health-related knowledge”, the code “experts (Sports coach, psychologist, dietitian, doctor)” was established. 10 students expressed views regarding this code. Accordingly,

the code and the theme have a distribution of 23.26%. Sample expressions highlighting the views on this theme are shown below:

S13: "I would expect an expert to advise and guide me."
S24: "Experts should motivate people."

For the theme of "Medium level of health-related knowledge", a single code, "teachers", was established. Three students expressed views regarding this code. Accordingly, the "teachers" code has a distribution of 6.98%. A sample expression highlighting the views on this theme is shown below:

S10: "My friends and my teachers."

For the theme of "Low level of health-related knowledge", four codes were established: "friends", "family", "economists", and "influencers". 16 students expressed views on "friends", 12 on "family", one student on "economists", and one on "influencers". Accordingly, the distribution of codes is 37.21% for "friends", 27.91% for "family", and 2.33 for "economists" and "influencers" each. Sample expressions highlighting the views on this theme are shown below:

S1: "[I expect support] from my friends; if they eat healthy I would, as well."
S8: "[I expect support] from my family, they need to take care of themselves, too."
S26: "My family; I would like to do activities/exercises together and I want them not to eat too late at night."

The students' views about second part of the question, "(In order to take good care of your health) what kind of support would you expect?" is shown in Table 9.

Table 9. The Distribution of Students' Views to the Question: "In order to take good care of your health, what kind of support would you expect?"

Theme	Code	f	%
Doing healthy activities together	Doing activities together/extra activities	8	36.36
	Total	8	36.36
Preparing for healthy activities	Motivation	6	27.27
	Awareness/guidance	5	22.73
	Approval	1	4.55
	Planning and scheduling	1	4.55
	Total	13	59.10
Organizing the medium for healthy activities	Improving the situation	1	4.55
	Total	1	4.55
	General Total	22	100%

Through the content analysis of the views to the question "What kind of support would you expect?" three themes appear: "doing healthy activities together", "preparing for healthy activities", and "organizing the medium for healthy activities". The "doing healthy activities together" theme consists of a single code: "doing activities together/extra activities". Eight students expressed views on this code. Accordingly, the code has a distribution of 36.36%.

Sample expressions highlighting the views on this theme are shown below:

S11: "[I would expect support] from my friends. We could go cycling together."
S23: "[I would expect support] from my friends. I would want them to do [activities] with me."

Regarding the theme of "preparing for healthy activities", four codes were established: "motivation", "awareness/guidance", "approval", and "planning and scheduling". Six students expressed views on "motivation", five on "awareness/guidance", and one student each on "approval" and "planning and scheduling". Accordingly, the distributions were 27.27% for "motivation", 22.73% for "awareness/guidance", and 4.55% for "approval" and "planning and scheduling" each.

Sample expressions highlighting the views on this theme are shown below:

S9: "My friends, influencers, and some of my teachers could guide me well."
S14: "Dietitians and my family. They would need to motivate and encourage me."
S19: "I would expect planning and scheduling from experts."

The theme of "organizing the medium for healthy activities" consists of a single code, "improving the situation". One student expressed views on the code. Accordingly, its distribution is 4.55%. A sample expression highlighting the views on this theme is shown below:

S17: "I would expect experts and economists to improve the situation."

High School Students' Views on the Question "Is education necessary for you to be healthy and, what should an impactful health–related education entail?"

The content analysis of the students' views on the questions "According to you, is education necessary for you to be healthy and, what should an impactful health–related education entail?" are shown in Figure 2 and Table 10 below.

The students' views about "Is education necessary for you to be healthy?" is shown in Figure 2. The content analysis on the views given by the students shows that 20 of them answered "Yes" and 6 of them answered "No" to the question, "According to you, is education necessary for you to be healthy?". According to this, 77% of the students think that education is necessary for them to be healthy.

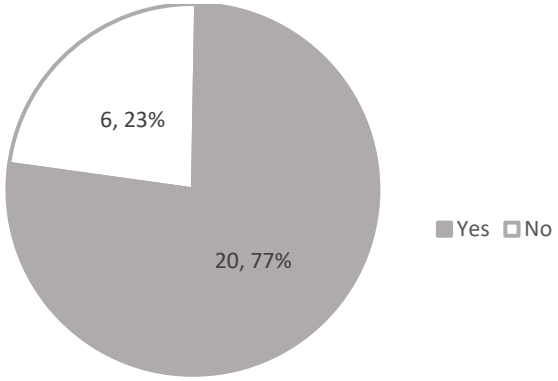

Figure 2. Distribution of the Student Views Regarding the Question, "Is education necessary for you to be healthy?"

The student views about "According to you, what should an impactful health–related education entail? Please explain." is shown in Table 10.

Table 10. The Distribution of Students' Views to the Question: "What should an impactful health–related education entail?"

Theme	Code	f	%
Educator	Learning from experts	7	25.00
	Guidance/awareness	2	7.14
	Total	9	32.14
Method of learning	Practical/hands-on learning	5	17.86
	Connection to real-life examples	5	17.86
	Support with visuals	1	3.57
	Total	1	39.29
Emphasis on individual characteristics	Personalized education	5	17.86
	Emphasis on intention	1	3.57
	Total	6	21.43
Duration of teaching	Increasing the number of hours	1	3.57
	Total	1	3.57
Level of development	Health-related education starting at an earlier age	1	3.57
	Total	1	3.57
	General Total	28	100%

For the question of "What should an impactful health–related education entail?", five themes were established: "Educator", "method of learning", "emphasis on individual characteristics", "duration of teaching", and "level of development". The "educator" theme is made up of two codes, "learning from experts" and "guidance/awareness". Seven students expressed views on "learning from experts", and two students on "guidance/awareness". Accordingly, the distribution of the codes is 25% for "learning from experts" and 7.14% for "guidance/awareness". Sample expressions highlighting the views on this theme are shown below:

S3: "Hands-on education would be better. For example during the physical education class, we could do more sports. Sports coaches could come [to train us]."
S7: "I could use some more guidance."

The "method of learning" theme consists of three codes, "practical/hands-on learning", "connection to real-life examples", and "support with visuals". Five students expressed views on "practical/hands-on learning" and "connection to real-life examples" each, and one student on "support with visuals". Accordingly, the distribution of the codes is 17.86% for both "practical/hands-on learning" and "connection to real-life examples", and 3.57% for "support with visuals". Sample expressions highlighting the views on this theme are shown below:

S12: "More visuals would make it more impactful."
S16: "The education has too much detail, but it does not contain any real-life solutions. It could be made differently."
S19: "I disagree. Health should be learned through doing and experiencing. I don't think that this could be provided by education."

The theme "emphasis on individual characteristics" consists of two codes, namely "personalized education" and "emphasis on intention". Five students expressed views on "personalized education", whose distribution is 17.86%. One student expressed views on the "emphasis on intention", accordingly, its distribution is 3.57%. Sample expressions highlighting the views on this theme are shown below:

S9: "An individualized approach would be more effective, compared to a collective one. After all, everyone could have a different lifestyle."
S26: "The intention could be emphasized."
S22: "I disagree. Everyone knows how their body works. I know what I need to a certain extent."

Regarding the theme "duration of teaching", one code, "increasing the number of hours" is established. One student expressed views on this code, thus its distribution is 3.57%. The sample expression highlighting the views on this theme is shown below:

S8: "I think that increasing the number of hours in schools, and bringing dietitians or doctors to classes could have a greater impact on us."

Regarding the "level of development", a single code, "health-related education starting at an earlier age", was established. One student expressed views on this code, thus its distribution is 3.57%. The sample expression highlighting the views on this theme is shown below:

S13: "It would be better if health class was moved to the middle school. Alternatively, if the class stays in the high school curriculum, it should be in 10th grade. In that case, we would be more aware."

Discussion

According to the results of the descriptive and content analyses conducted on the health- and health education-related views of high school students, can be expressed as follows. In the views of high school students on the concept of health and healthy life behaviours in the 1st and 2nd research problems, the concept of health is intensely defined as physical and spiritual well-being, while only one student emphasizes “social well-being”. When it comes to healthy living activities, it is seen that physical well-being (with a distribution of 77%) is emphasized very intensely. According to these results, it is revealed that the students think of the concept of health as "physical well-being" and not as "spiritual" and "social" well-being (Table 2 - 3). On the other hand, it is seen that students express the code of social well-being more under health activities, even if they did not state it as a definition (Table 3). This situation shows that although the majority of the students cannot define health as physical, spiritual and social well-being, they make evaluations that social well-being is effective in their lives.

In the third sub-problem of the study, 19% of the students stated that they have never done healthy living activities in the last period, which raises concerns that their growth and development may be weak. (Figure 1). Because Bebiş, Akpunar, Özdemir and Kılıç (2015) report that those who do sports/exercise more during adolescence usually continue this professionally, are aware of their health responsibility, and have a high level of health promotion behaviours. Moreover, in the answers to the 4th sub-problem of the study, it is seen that they do not include the statements that they will be left behind especially from the activities for social well-being.

In the answers to the 4th sub-problem of the research, it is seen that the students have only been doing physical activities recently, and only one answer they stated regarding social well-being is "staying away from harmful people". This result suggests that students should be supported in terms of social health. Moreover, it is seen that they do not include activities for mental well-being as well as social well-being among their recent activities (Table 4). This may be due to the fact that high school students are not aware of the activities that can be done for social and spiritual health or they consider it unnecessary to include these behaviours in their lives. For this reason, the results of the research suggest that social and spiritual health practices and activities should be planned in schools and reminders should be made to increase awareness in this regard. As a matter of fact, Stewart-Brown (2001) reports that health promotion programs in schools should be designed and implemented with social health in mind for further improvement. It has also been reported that excluding emotional, spiritual and social health status by focusing only on improving physical health may reduce the effectiveness of school-based programs (Stewart-Brown, 2001).

The results of our research show that students cannot consider their health as a whole, and they also show that they miss the social aspect of their healthy behaviour, in other words, they leave one aspect missing in their healthy living activities. In order not to experience the disadvantages of today's digitalized world and to be able to socialize in a healthy way, social health should be better monitored and strengthened together with physical and mental health in high school students who are in the period of personality development. Von Ah, Ebert, Ngamvitroj, Park and Kang (2004) also draw attention to the fact that our health behaviours that occur during youth may have a lasting effect on health throughout our later life.

In the 5th sub-problem of the study, the students stated that environmental factors were generally effective on their health (65%) (Table 6). Students included factors such as family/friends, diseases, economy and nutritional conditions in the environmental factors. Only 35% of the students emphasized the effect of individual factors such as wanting something and volition on health. This result shows that students do not have a strong perception that they will have a greater impact on their health, and that environmental factors affect their health more strongly than they do. For this reason, students should be supported in terms of factors such as volition that will affect their health. Otherwise, our students with this view will not be able to act without outside support to manage and improve their own health, and they will have difficulty expressing their own volition regarding their health, which is undesirable. In accordance with the Health Action Process Approach (HAPA) model, Schwarzer (2016) puts great emphasis on volition in producing healthy behaviour. He highlights the intention phase, which comes right after the motivation phase, allowing the plans regarding behaviour and effort are made and realized. The fact that during the interviews, the students mentioned individual, rather than environmental, spiritual constraints regarding health, could be due to issues of volition.

“What prevents you?” question in the 6th sub-problem of the research. It is seen that the students who were faced with the question mentioned environmental barriers (56%) rather than individual barriers (44%) (Table 7). This situation suggests that high school students are aware of their power to influence their health individually, but they cannot use their own controls due to environmental effects. High school students stated that their negative behaviours especially regarding adequate and balanced nutrition (16%) as an individual factor prevent them from being healthy (Table 7). However, it is very important for high school students, who are developing rapidly, to have an adequate and balanced diet in the adolescence period. Bebiş et al. (2015) also determined in their study that approximately 90% of adolescents who are high school students have the habit of eating fast food in nutrition. As a matter of fact, it is underlined in the researches that the most basic structure for the health of future generations and ensuring economic welfare is adequate and balanced nutrition. (Dapi et al., cited in: Hergüner, Yücel, Yaman, Sevil, Korkmaz & Küçüközkan, 2019). Berçin (2010), on the other hand, states in the results of his study that in order for students to have a healthy and balanced diet, training should be given on this subject and practices such as healthy consumption days should be organized. In addition, it shows considering the use of "games/social media" as an individual obstacle (7%), that they cannot as even benefit freedom, self-management, responsibility and problem-solving. However, Gray (2015) defines computer games as a power that helps to relieve ailments such as anxiety, depression and helplessness and to provide a sense of socialization.

Our results reveal that in addition to individual barriers, students also need to be empowered to make appropriate choices and establish positive friendship ties over their circle of friends (21%), which they see as the most intense environmental barriers (Table 8). Walker et al. (1990; cited in Berçin, 2010) reported that good communication with social ties such as family, relatives and friends affects an individual's positive health behaviours. Gürsan (2021), on the other hand, found that the decrease in the desire to play in a child who is socially excluded by his friends also affects physical activity.

According to the 7th sub-problem of the study, they stated that they expect support from their friends, who are the group with the lowest health knowledge (70%), and then from their families, in order to take care of their health.

Students who think that they can only get support from experts such as sports coaches, psychologists, dietitians and doctors, who are the most knowledgeable about health, at a rate of 23%, stated that they can get support at a much lower rate (7%) from their teachers (see Table 8). These results show that they receive insufficient support from their friends (37%) and families (28%) in terms of health, and they cannot be fed adequately from their teachers, whom they can reach easily. According to these results, it can be said that young people will be much more successful in healthy life activities when social support starts in the family and is continued by the teachers and school health personnel during the school period. Therefore, with the 2022 directive of the Ministry of National Education in Turkey, the decision to assign school health nurses to public and private schools and to provide health education is quite positive. The fact that the students did not emphasize their teachers as social support in our results suggests that the students do not see their teachers as well-informed about health, and that teachers do not model their health behaviours. However, Berçin (2010) states that teachers and school personnel are important role models in terms of health behaviours; states that health promotion programs should be an integral part of school curricula. Moschovi et al. (2020) also mention the important impact of didactic interactions at school on the development of the child and the importance of teachers' positive and supportive attitudes in promoting healthy activities of sick children. Ofosu, Ekwaru, Bastian, Loehr, Storey, Spence and Veugelers, (2018), on the other hand, report that lifestyle practices are adopted during childhood and adolescence and that the school environment has a significant impact on health lifestyle development. In addition, the results of our research on what kind of support the students expect show that they mostly demand support in preparing for healthy living activities (59%) (see Table 9). Especially the students who want to be motivated (27%) and to be conscious (23%), the next issue they expect support is about doing healthy life activities together (36%). These results reveal that high school students especially need to be informed about health behaviours, to raise awareness, to be directed and to do activities in interaction. Babaoğlu and Hatun (2002) explain that the negative relationship between family members could impact the psychology of the adolescent, leading to overeating or obesity. Walker et al. (1990; cited in Berçin, 2010) on the other hand, reported that good interaction and communication with family, friends and health professionals affect the individual's positive health behaviours.

According to the 8th and last sub-problem of the research, it was seen that 77% of the students thought that education was needed. Although this rate is positive, it is also worrying that 33% of the students do not need health education (Table 10). Weinstein (1996) reports that especially adolescents and young adults display unrealistic optimism because they do not experience a decline in health (Renner, Knoll & Schwarzer, 2000). It is of great importance for the well-being and welfare of individuals and society to investigate the causes of negative perspectives on health education in students and to identify and find ways to eliminate them. As a matter of fact, in the Ottawa Convention (1986) signed under the leadership of the World Health Organization, it is accepted that health education is a necessity. Berçin (2010) states that children, young people and adults, who become conscious of how to improve health through health education, can acquire healthy lifestyles and behaviours and stay away from risky behaviours in terms of health. According to the students' views on how to make health education more effective in our research, using teaching methods that give examples from daily life and practice as the ways to make health education most effective (39%); It is shown that getting support from expert trainers (32%) who provide effective guidance and raise awareness. These results suggest that attention should be paid to the training of health education teachers, activities should be planned with health personnel and experts at school, and teaching

methods should be diversified. By planning an effective health education tailored to the needs of students, young people can better understand the value of their health and how it can be improved. Bebiş et al. (2015) also express the importance of an effective health education; They emphasize that health education should be guiding in subjects such as reducing the frequency of fast-food eating, exercising and coping with stress, and that school nurses/teachers should expand their guidance/counselling services regarding health checks and healthy behaviours (Bebiş et al., 2015).

Conclusion

According to the results obtained in the research, although students believe that their individual strengths should be effective on their health, they mostly state that environmental factors affect their health status. This suggests that their beliefs in coping with environmental factors in developing and maintaining healthy behaviors should be further strengthened and supported. Considering the high impact of friend and family circles on health behavior, precautions should be taken to create positive guidance and students should be encouraged to meet with experts in the field of health in schools more frequently in the context of their desire to reach experts. In addition, new programs should be created especially for biology teachers to be well trained in health matters, as they do not expect to receive almost any support from their teachers.

Recommendations

According to the results obtained from the research, the following points can be suggested for the health development of high school students:

- The health education program can be developed more intensively in order for students to understand the concept of health with the aspect of "social health".
- By following students' social health behaviours better, and they can be strengthened physical and mental health with effective practices.
- By planning practices and activities related to social and mental health in schools, activities that increase mental and social awareness as well as physical well-being can be prepared.
- Measures can be taken regarding digital games, which are frequently included in students' digital activities for the social well-being of the students
- Students can be planned to manage their own health, control and strengthen their willpower.
- Students can be informed about the harms of fast-food eating habits in nutrition, and wider opportunities can be provided in schools for adequate and balanced nutrition.
- Students can be supported by school health personnel monitoring and maintaining relations, especially of their friends and families.
- Measures can be taken for students to choose the right shares in social media and game applications and to be positively affected by them.
- Curriculum can be rearranged and expanded so that teachers and teacher candidates become better sources of information and social support.
- Students' sports coach, psychologist, dietitian, family doctor, doctor, nurse, etc. easier access to experts

can be provided; with experts seminars and practices can be designed

- Health programs implemented in schools can be strengthened with topics and practices related to current life; in curricula that intensify interaction/sharing with friends and families, joint activities can be planned
- The reasons and ways of eliminating negative student perspectives on health education can be extensively researched.
- In order for health education to be more effective, the methods and tools that teachers use in lessons can be diversified.
- Alternative health education activities that students can participate in can be planned and measures can be taken to increase student interest in health activities.

Notes

This work was reproduced using a part of the Master's thesis by Evrim Sütçü, prepared under the supervision of Associate Professor Miraç Yılmaz.

References

Arastaman, G., Öztürk Fidan, İ. & Fidan, T. (2018). Validity and reliability in qualitative research: a theoretical analysis, *YYU Journal of Education Faculty, 15*(1), 37-75.

Ardic, A. & Esin, M. N. (2015). The Adolescent Lifestyle Profile scale: reliability and validity of the Turkish version of the instrument. *Journal of Nursing Research, 23*(1), 33-40.

Babaoğlu, K. & Hatun, Ş. (2002). Childhood obesity. *Journal of Continuing Medical Education, 11*(1), 8-10.

Bas, M. & Donmez, S. (2009). Self-efficacy and restrained eating in relation to weight loss among overweight men and women in Turkey. *Appetite,* 52(1), 209-216.

Bebiş, H., Akpunar, D., Özdemir, S., & Kılıç, S. (2015). Bir ortaöğretim okulundaki adölesanların sağlığı geliştirme davranışlarının incelenmesi. Gülhane Tıp Dergisi, 57(2), 129-135.

Berçin, T. (2010). *Determination of Healthy Lifestyle Behaviors of High School Students and Factors Affecting These Behaviors* (Master's Thesis). Hacettepe University Institute of Health Sciences, Ankara.

Charron, D. F. (2012). Ecohealth: Origins and Approach, Ecohealth Research in Practice -Innovative Applications of an Ecosystem Approach to Health-, D. F. Charron (Editor) ISBN 978-1-4614-0516-0, e-ISBN 978-1-4614-0517-7, DOI 10.1007/978-1-4614-0517-7, Springer.

Daniel, S. J. (2020). Education and the COVID-19 pandemic. *Prospects, 49*(1), 91-96.

Gray, P. (2015). *Cognitive benefits of playing video games. Psychology Today*. Posted February 20, 2015, Date of access: 05.04.2022.

Gürsan, K. (2021). Investigation of obesity prevalence, physical activity level and healthy lifestyle behaviors in adolescent children. *Academic Developments on Health Sciences,* 359.

Hergüner, G. Yücel, A.S. Yaman, Ç. Sevil, Ü. Korkmaz, M. & Küçüközkan, Y. (2019). Examining the Relationship Between Physical Activity and School Performance in Students, *2 International Congress On Healthy Life*, 10-11 Ekim, İstanbul, 190

Ministry of National Education. (2018a). *Secondary Education 9th Grade Health Information and Traffic Culture*

Curriculum. Retrieved from http://mufredat.meb.gov.tr/Program Detay.aspx?PID =348, Date of access: 03.05.2019.

Ministry of National Education. (2018b). *Secondary Education Institutions Weekly Curriculum,* Decision of Board of Education 56, Ministry of National Education Journal of Notifications, 2726, Ankara. Retrieved from http://www.meb. gov.tr/earged /earged/21.%20yy_og_pro.pdf, Date of access: 04.05.2019.

Miles, M. B. & Huberman, A. M. (1994). *Qualitative Data Analysis: A Source Book of New Methods*. SAGE Publications.

Özvarış, B. Ş. (2001). *Sağlık Eğitimi ve Sağlığı Geliştirme [Health Education and Health Promotion].* Hacettepe Halk Sağlığı Vakfı Yayınları (Hacettepe Public Health Foundation Publications), 8-42.

Ministry of Health. (2011). *Primary Health Care Services.* Retrieved from https://hsgm. saglik.gov.tr/tr/ailehekimligi/birinci-basamak-sa%C4%9Fl%C4%B1khizmetleri.html, Date of access: 13.03.2022.

Moschovi, D. Kapetanakis, E.I., Sfyridis, P.G., Rammos. S. & Mavrikaki, E. (2020). Physical activity levels and self-efficacy of Greek children with congenital heart disease compared to their healthy peers. *Hellenic J Cardiol.* 61(3):180-186. doi: 10.1016/j.hjc.2019.01.002. PMID: 30639356.

Ofosu, N. N., Ekwaru, J. P., Bastian, K. A., Loehr, S. A., Storey, K., Spence, J. C., & Veugelers, P. J. (2018). Long-term effects of comprehensive school health on 244 health-related knowledge, attitudes, self-efficacy, health behaviours and weight status of adolescents. *BMC Public Health*, 18(1), 1-9.

Ottawa Charter for Health Promotion (1986). Ottawa Charter for Health Promotion. *First International Conference on Health Promotion,* Ottawa, 17-21 November, Canada, https://www.who.int/teams/health-promotion/enhanced-wellbeing/first-global-conference, Date of access: 18.04.2022.

Renner, B., Knoll, N., & Schwarzer, R. (2000). Age and body make a difference in optimistic health beliefs and nutrition behaviors. International Journal of Behavioral Medicine, 7(2), 143-159.

Schwarzer, R. & Renner, B. (2000). Social-cognitive predictors of health behavior: Action self-efficacy and coping self-efficacy. *Health Psychology*. 19(5),487-495.

Stewart-Brown, S. (2001). *Evaluating health promotion in schools: Reflections*. WHO regional publications. European series. 271-84.

Takmaz, S. & Yılmaz, M. (2020). The place of virus in secondary education curriculum. *Anatolian Teacher Journal, 4*(1), 21-43.

Schwarzer, R. (2016). Health action process approach (HAPA) as a theoretical framework to understand behaviour change. *Actualidades en Psicología, 30*(121), 119-130.

Schwarzer, R. & Renner, B. (2000). Social-Cognitive Predictors of Health Behaviour: Action Self-Efficacy and Coping Self-Efficacy. *Health Psychology, 19*(5):487-95. DOI:10.1037/0278-6133.19.5.487

Teddlie, C. & Tashakkori, A. (2009). *Handbook of Mixed Methods in Social and Behavioural Research*. Trans. Ed: Dede, Y. & Demir, S. B. 2015:39, Anı Publishing.

Von Ah, D., Ebert, S., Ngamvitroj, A., Park, N., & Kang, D. H. (2004). Predictors of health behaviours in college students. Journal of advanced nursing, 48(5), 463-474.

World Health Organization (WHO), (1948). Summary Reports on Proceedings Minutes and Final Acts of the International Health Conference held in New York from 19 June to 22 July 1946. World Health Organization, available from: https://apps.who.int/iris/handle/10665/85573, Date of access: 18.04.2022.

Author Information

Evrim Sütçü	**Miraç Yılmaz**
https://orcid.org/0000-0003-1140-4054	https://orcid.org/0000-0003-3200-2767
Hacettepe University	Hacettepe University
Faculty of Education	Faculty of Education
Department of Mathematics and Science Education	Department of Mathematics and Science Education
Biology Education Majors Program 06800 Beytepe	Biology Education Majors Program 06800 Beytepe
Ankara	Ankara
Türkiye	Türkiye Contact e-mail: *mirac@hacettepe.edu.tr*