Mediterranean Nursing and Midwifery

Mediterr Nurs Midwifery 2021;22(1):25-31 DOI: 10.5152/MNM.2021.21012

ORIGINAL ARTICLE

Evaluation of Health Perception and Healthy Life Conduct Behavior of Secondary School Students

Esra Karabacak[1], Gülay Manav[2]

[1]Department of Pediatric Intensive Care Unit, Dr. Burhan Nalbantoğlu State Hospital, Nicosia, North Cyprus
[2]Department of Child Health and Diseases Nursing, Muğla Sıtkı Koçman University School of Health Sciences, Muğla, Turkey

Abstract

Objective: This descriptive research study was conducted to assess health perceptions and healthy lifestyle behaviors of middle school students.

Method: The research was conducted on 346 students selected using the stratified and simple random sampling method in all middle schools in Famagusta District. The Personal Information Form, the Health Perception Scale (HPS), and the Healthy Lifestyle Behaviors Scale II forms were used.

Results: The students in the sample were found to scor an average of 52.96 ± 7.73 points on HPS. Therefore, the health perception of the students was found to be moderate. The students scored an average of 130.42 ± 20.71 points on this scale. The overall scores of the students who were included in the stud on HPS were found to statistically significantly and positively correlate with their overall scores on the Healthy Lifestyle Behaviors Scale II and their scores on all dimensions of the scale. This means that the perception of health directly affects the behaviors of healthy lifestyle.

Conclusion: In conclusion, it is recommended to carry out studies for raising students' health perceptions and improving their healthy lifestyle behaviors because enhancing health perceptions of students positively affects their healthy life behaviors.

Keywords: Adolescent, health, healthy lifestyle, nurse

Introduction

The basis of healthy lifestyle choices and behaviors in adulthood begins in childhood and adolescence (Kelly et al., 2011). Health behaviors (health promoting and health risk behaviors) of school-age children and early adolescents seem to emerge from the intersection of genetic, environmental, and social variables. Not all children engage in health-promoting behaviors; and when they become adolescents, they can often exhibit risky health behaviors such as malnutrition and insufficient physical activities, smoking and alcohol use, or using non-prescription drugs (Rew et al., 2010).

Adolescents shape their own behavioral lifestyles at a young age, and these patterns of behavior can affect their lifelong health. Considering the importance of adolescent health, understanding adolescent health behaviors as well as the related factors are all listed as the first step in improving lifelong health and determining which adolescent health behaviors require intervention accordingly (Shin & Jung Kang, 2014).

The physical, cognitive, social, and emotional skills acquired during adolescence constitute the basis of well-being throughout life, including the capacity to engage effectively within work and entertainment, family life, and the relevant communities (Robeyns, 2007). Similarly, not obtaining these skills during adolescence may have long-term adverse effects on individuals, families, and communities (The Lancet Commissions 2016).

Multi-component interventions involving behavior modification, training, and physical activity toward healthy lifestyle behaviors in adolescents have not been sustainable in the longer term. Therefore, it is of importance to determine the variables that affect the health perception of adolescents and promoting healthy lifestyle behaviors. Investments in the transformation of health, education, family, and legal systems to promote the acquisition of physical, cognitive, social, and emotional abilities that constitute the basis of welfare throughout the life are suggested to increase adolescents' health and well-being (Sheehan et al., 2017).

Corresponding author
Esra Karabacak, E-mail: esrakarabacak2016@gmail.com

Received: 26.04.2021
Accepted: 07.05.2021

Cite this article as: Karabacak, E., & Manav, G. (2021). Evaluation of health perception and healthy life conduct behavior of secondary school students. *Mediterranean Nursing and Midwifery, 1*(1), 25-31.

We believe that this study will provide important data for the region as the relevant research on health perceptions and healthy lifestyle behaviors of adolescents in Cyprus have not been found in the literature. Thus, the answers to the following questions were searched:

- What are the health perceptions of secondary school students?
- How are healthy lifestyle behaviors stated by secondary school students?
- Is there a relationship between health perception and promoting healthy lifestyle behaviors in secondary school students?

Material and Methods

This study was carried out as a descriptive study to evaluate the health perceptions and healthy lifestyle behaviors of secondary school students. The study population included 346 students between 12 and 14 years of age, in three different state secondary schools and a private secondary school.

Instrumentation

As a data collection tool, we used the "Introductory Information Form," "Health Perception Scale" to assess children's health perceptions and "Health-Promoting Lifestyle Profile II" to reveal the healthy lifestyle behaviors of participating children.

The Introductory Information Form was developed by the researcher after having searched the relevant literature. The questionnaire consists of 17 questions covering the following variables: Students' ages, sex, number of siblings, their grades at the school, working status and income levels of parents; their educational status, family structure, social security, harmful habits affecting their health habits, place of living, their hobbies, as well as the health status of the participant parents and children.

The Health Perception Scale, a 5-point Likert-type scale, was developed by Diamond et al. (2007), and the reliability and validity of the Turkish version was realized by Kadıoğlu & Yıldız in 2012. The minimum score that can be obtained in the scale is 15, whereas the maximum score is 75. The scale has four sub-dimensions: "Center of control," "Self-awareness," "Certainty," and "Importance of health." The Cronbach alpha values for the original of the scale were reported as follows; center of control 0.90; self-awareness 0.91; certainty 0.91; and importance of health 0.82 (Kadıoğlu & Yıldız, 2012). The low score indicates that health perception is poor, and high score represents good perception. In our study, the health perception was found to be Cronbach alpha = 0.680. According to the results of our study, the Cronbach alpha values of the health perception scale sub-dimensions were revealed as center of control 0.622; self-awareness 0.559; certainty 0.598; and the importance of health as 0.536.

Main Points

- Health behaviors of school-age children and early adolescents seem to emerge from the intersection of genetic, environmental, and social variables.
- Unhealthy lifestyle behaviors in school-age children are widespread.
- Secondary schools and educators working in these schools should contribute to promoting healthy lifestyle education during the childhood period.

The Health-Promoting Lifestyle Profile (HPLP) II was developed by Walker et al. (1987), and validity and reliability studies in Turkish were conducted by Bahar et al. (2008). The lowest score was 52 and the highest score was 208. The highest score represents positive health behavior, and the lowest score shows negative health behavior. The Cronbach alpha reliability coefficient of the scale was reported to be 0.94. This scale can be used in adolescents. According to the results of this study, HPLP-II had the Cronbach alpha = 0.898. The Cronbach alpha results of the subgroups were as follows: health responsibility 0.740; physical activity 0.765; nutrition 0.522; spiritual growth 0.705; interpersonal relations 0.708; and stress management as 0.636.

Statistical Analysis

The collected data were analyzed by Statistical Package for Social Sciences (IBM SPSS Corp.; Armonk, NY, USA) version 22.0. Descriptive statistical analyses of the data were done using *t* tests and analysis of variance.

Ethical considerations

The research protocol of administering questionnaires to the participating students was approved by the research and publication ethics board of Eastern Mediterranean University at Northern Cyprus (Approval Number: ETK00-2018-00123). We informed the participants about the aim and the scope of the study and obtained written informed consent.

Results

The study revealed that 42.49% of the participants were 13 years old, 52.02% of them were boys, and 34.39% were seventh graders. When the family structures and social status of the students were examined, it was found that 74.28% of them were nuclear families, 64.16% of them had good economic incomes, 91.62% of them had social security, 94.22% of them had hobbies, and 71.68% of them lived in the city. Of the students included in the study, 65.61% of the mothers and 97.69% of the fathers were reported to have worked. The results of the educational levels of the mother showed that 37.86% of the mothers were high school graduates, and 34.39% of them had university or post-graduate degrees.

The mean score of the students was found to be 52.96 ± 7.73, and the health perceptions of these students were revealed as moderate. In addition, it was observed that the most powerful aspects of students' perceptions of health were based on the self-awareness dimension. The students whose mean scores were 130.42 ± 20.71 in HPLP were found to have a healthy lifestyle behavior with moderate aspects. The scores of the students on the scales and sub-dimensions are given in Table 1.

Table 1
Students' Scores (n = 346) on Perception of Health Scale and Health-Promoting Lifestyle Profile II

Health-Promoting Lifestyle Profile II	*n*	*M*	*SD*	Min	Max
Center of control	346	17.02	4.04	5	25
Certainty	346	12.95	3.25	4	20
Importance of health	346	11.72	2.38	3	15
Self-awareness	346	11.27	2.33	4	15
Perception of Health Scale	346	52.96	7.73	32	73
Health responsibility	346	19.01	5.02	9	34
Physical activity	346	19.28	5.15	8	32
Nutrition	346	20.37	3.90	11	32
Spiritual growth	346	27.17	5.09	15	40
Interpersonal relations	346	24.48	4.62	11	36
Stress management	346	20.14	4.21	9	32
Overall HPLP-II	346	130.42	20.71	76	190

Table 2
Some Factors Affecting Perceptions of Health in Secondary School Students (n = 346)

Perceptions of Health Scale	Variables		*n*	*M*	*SD*	t[a]/F[b]	*p*	Difference
Center of control	Mother's level of education	Primary school & lower	105	15.61	4.21	11.939[b]	.000	1-3
		high school	131	17.15	3.68			1-3
		graduate/post-graduate	110	18.21	3.91			
	Father's level of education	Primary school & lower	109	16.19	4.14	5.762[b]	.003	1-3
		high school	118	16.84	4.26			2-3
		graduate/post-graduate	119	17.96	3.53			
Certainty	Mother's employment status	Working	227	17.22	3.90	1.273[a]	.204	1-3
		Not working	119	16.64	4.29			
	Mother's level of education	Primary school & lower	105	12.15	3.26	5.337[b]	.005	
		high school	131	13.07	3.04			
		graduate/post-graduate	110	13.56	3.36			
	Family Type	Nuclear family	257	13.15	3.12	3.163[b]	.044	1-2
		Extended family	36	11.72	3.57			2-3
		Fragmented family	53	12.79	3.53			
	Income Status	Good	222	13.33	3.25	6.530[b]	.002	1-3
		Bad	16	13.81	3.02			2-3
		Average	108	12.04	3.11			
Importance of health	Father's health problem	Yes	315	11.83	2.34	2.741[a]	.006	
		No	31	10.61	2.58			
	Income status	Good	222	12.07	2.30	6.899[b]	.001	1-2
		Bad	16	11.00	3.63			1-3
		Average	108	11.11	2.21			
Self-awareness	Mother's employment status	Working	227	11.48	2.17	2.374[a]	.018	
		Not working	119	10.86	2.58			
	Father's employment status	Working	338	11.31	2.32	2.177[a]	.030	
		Not working	8	9.50	2.33			

[a]independent *t*-test
[b]One-way analysis of variance

When the factors affecting the scores of the students' health perceptions were analyzed, it was revealed that the mothers' working status (t = 0.038), mothers' educational status (F = 9.934), fathers' health problem (t = 2.819), and family income levels (F = 4.298) were found to be effective. It was also determined that mothers who were primary or lower school graduates were lower than those of mothers with high school, undergraduate, and graduate degrees; and families who defined their income level as good had higher health perceptions than those who defined their income levels as poor or moderate. Factors revealed as affecting the health perceptions of secondary school students are given in Table 2.

When the factors affecting the scores of the students' healthy lifestyle behaviors were examined, age (F = 0.026), having a sibling (t = 0.040), mother's educational level

Table 3
Some Factors Affecting Health Lifestyle Behaviors of Secondary School Students (n = 346)

Health-promoting lifestyle profile sub-dimensions	Variables		*n*	*M*	*SD*	ta/Fb	*p*	Difference
Health responsibility	Age	12	105	19.67	5.16	3.486[b]	.032	1-2
		13	147	18.18	4.88			
		14	94	19.55	4.95			
	Grade	Sixth grade	118	19.52	5.29	3.695[b]	.026	1-2
		Seventh grade	119	18.00	4.66			2-3
		Eighth grade	109	19.55	4,98			
	Income	Good	222	19.53	4.95	3.706[b]	.026	1-2
		Bad	16	19.00	5.48			1-3
		Average	108	17.94	4.98			
Physical activity	Age	12	105	19.67	5.16	3.883[b]	.022	1-2
		13	147	18.18	4.88			1-3
		14	94	19.55	4.95			
	Grade	Sixth grade	118	19.93	5.03	3.042[b]	.049	1-2
		Seventh grade	119	18.36	5.21			2-3
		Eighth grade	109	19.57	5.10			
	Mother's education	Primary school & lower	105	18..38	4.66	3.058[b]	.048	1-3
		high school	131	19.30	5.25			
		graduate/post-graduate	110	20.11	5.36			
	Income	Good	222	19.87	4.91	4.762[b]	.009	1-2
		Bad	16	19.50	5.57			1-3
		Average	108	18.03	5.37			
Nutrition	Mother's health problem	Yes	310	20.54	3.93	2.463[a]	.014	
		No	36	18.86	3.37			
	Income	Good	222	20.89	3.88	5.814[b]	.003	1-2
		Bad	16	19.94	4.19			1-3
		Average	108	19.36	3.74			
Spiritual growth Interpersonal relations	Sibling	Yes	45	29.20	5.08	2.900[a]	.004	
		No	301	26.86	5.04			
	Mother's education	Primary school & lower	105	25.75	5.00	6.944[b]	.001	1-3
		high school	131	27.38	4.75			
		graduate/post-graduate	110	28.26	5.31			
	Father's education	Primary school & lower	109	26.39	4.70	3.151[b]	.044	1-3
		high school	118	26.99	5.19			
		graduate/post-graduate	119	28.05	5.25			
	Mother's health problem	Yes	310	27.45	5.01	3.080[a]	.002	
		No	36	24.72	5.20			
	Income Level	Good	222	27.67	5.23	4.798[b]	.009	1-3
		Bad	16	28.44	3.48			2-3
		Average	108	25.94	4.83			
	Sibling	Yes	45	25.78	4.50	2.029[b]	.043	
		No	301	24.29	4.62			
	Mother's education	Primary school & lower	105	24.11	4.38	4.871[b]	.008	1-3
		high school	131	23.84	4.37			2-3
		graduate/post-graduate	110	25.59	4.97			
	Father's education	Primary school & lower	109	23.59	4.15	3.238[b]	.040	1-3
		high school	118	24.69	4.59			
		graduate/post-graduate	119	25.09	4.96			
Stress management	Mother's health problem	Yes	310	20.39	4.22	3.272[a]	.001	
		No	36	18.00	3.54			

[a]independent *t*-test
[b]One-way analysis of variance

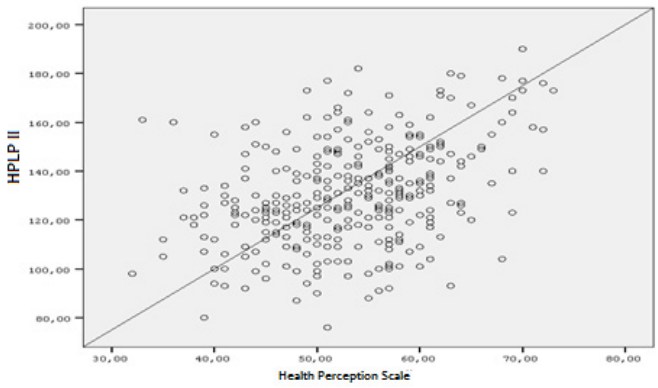

Figure 1. The Regression Line and Correlation Chart on the Health Perception Scale of the Students and the Health-Promoting Lifestyle Profile Scale II

(F = 0.028) and income level (F = 0.002) were found to be effective. It was also determined that as the ages of middle school children increased, healthy lifestyle behaviors scores decreased, and the best group was 12-year-old students. The scores of children whose mothers had undergraduate or graduate degrees were significantly higher than those whose mothers had lower educational levels. The scores of children with good family income levels were higher than those of children with lower levels. Table 3 shows some factors that seem to affect the healthy lifestyle behaviors of secondary school students.

It was found that there were statistically significant and positive correlations between the scores of the students in the scope of the health perception scale and the scores they received in HPLP II and from all the sub-dimensions in the scale ($p < .05$) (Figure 1). As the scores of the students' health perception scale increased, the scores they got from the overall scale of HPLP II scale and from all the sub-dimensions in the scale increased respectively.

Discussion

The overall mean scores of the students' health perception scale were found to be 52.96 ± 7.73. According to this result, it was determined that the students' health perception was moderate. In addition, the health perception of the students seemed to have been affected by the educational level, family type, working status, and income level of the family. In the relevant literature, Yang et al. (2006) have revealed that health perceptions in adolescents were poor owing to irregular breakfast habits and health status among the adolescents in Taiwan.

It was determined that the average score of the students in HPLP II scale was 130.42 ± 20.71. We found that the mean scores of students who participated in the study were above the average level. Similarly, in a study conducted by You et al. (2014) on social and emotional health perception with 2,000 high school students, the mean scores of HPLP were found to be 118 ± 17.78.

In our study, some factors that affected HPLP scores were detected as age and grade of the child, having a sibling, the educational and health status of the parents, and the income level of the family.

A study on health behaviors in 4,273 primary school students by Cartland & Ruch-Ross et al. (2006) showed that the improvement of health behaviors over time was not consistent as the grades got higher. They also observed a decrease in social and risk behaviors as well as positive health behaviors. As a result, declining health behaviors during primary school were revealed to have been associated with risk behaviors of adolescents. In another study, 2,833 primary and middle school students' healthy life behaviors were examined, and sex and class were reported to be effective accordingly. Healthy lifestyles obtained at early ages in primary schools were found to have been lost as students' grades increased (Nakano et al., 2012).

When the results of the studies in the literature were examined, it was determined that there was a significant difference between the level of parental education and the total score of the HPLP scale. In a controlled study conducted by Díez et al. (2012) in Mexico to examine the effectiveness of health promotion intervention in university students, they determined that the level of parental education and HPLP scale scores increased in parallel, and there was a significant difference between the groups. Chen et al. (2007) in their study with 346 students in sixth and eighth grades stated that adolescents had higher scores on health responsibility, nutrition, and exercise dimensions as parental education increased. In another study, it was revealed that parental education was effective only in nutritional behaviors of adolescents (Glozah & Pevalin, 2015). In the study, it was stated that promoting a healthy lifestyle was basically started, developed, and maintained in the family. Thus, one can claim that every health behavior is a family activity. The educational level of a family can affect health positively or negatively.

In a study conducted by Hu et al. (2016) on the trends of socioeconomic inequalities in self-assessed health in 17 European countries between 1990 and 2010, they reported that as the income level decreased, the health status could be at low levels. Maniecka-Bryla et al. (2012) examined the health inequalities between rural and urban areas of Lodz in Poland. In that study they determined that there was no relationship between income status and perceived health status of individuals according to their statements. In a study conducted by Meireles et al. (2015) in Brazil with 1,042 adolescents on self-rated health, age, sex, and related factors among urban adolescents, they found that there was a statistically significant difference between HPLP scale scores and income status in terms of the family income status of students. In some studies in the literature, the income level was determined based on the measurement; in our study, the students were questioned according to their own expressions about their economic situation, and these various factors may have had an impact on the different results. Although the economic situation is closely related to the income level, it is affected by many different individual, social, and cultural variables. The stress caused

by a poor economic situation on adolescents should not be overlooked, and adolescents can perceive and interpret the factors around themselves, which may lead them to give more importance to their health by taking responsibility ultimately.

Limitations

An important limitation of this study was that it was carried out in a residential area in the northern part of Cyprus. Therefore, more research is needed to determine the overall healthy lifestyle behaviors of all secondary school students in Cyprus. The factors affecting promotion of healthy lifestyle behaviors with more participants can be analyzed better, and one can provide useful information about the subject to be tackled respectively.

The findings presented in this study have revealed the relationship between health perception and health behaviors in secondary schools. In addition, it indicates the age and grade of the child, the educational and health status of the parents, and the income level of the family as the factors affecting the health perceptions and health-promoting lifestyle behaviors of secondary school students.

In conclusion, unhealthy lifestyle behaviors in school age children are widespread. Therefore, secondary schools in Cyprus and educators working in these schools should contribute to health promoting lifestyle education during the childhood period. The continuity of education should be ensured especially in upper classes of secondary schools to be able to retain the health behaviors obtained in the lower classes in adulthood.

As the results of the study have shown, when designing interventions for adolescent-targeted health-promoting lifestyle behaviors in Cyprus, children's grades, parents' educational and employment status, health status, type of family, and income levels should all be taken into consideration.

Ethics Committee Approval: Ethics Committee approval for the study was obtained from the Ethic Committee of Eastern Mediterranean University at North Cyprus (Approval Number: ETK00-2018-00123).

Informed Consent: Written informed consent was obtained from all individual participants included in the study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - E.K., G.M.; Design - E.K., G.M.; Supervision - G.M.; Resources - E.K.; Materials - E.K., G.M.; Data Collection and/or Processing - E.K.; Analysis and/or Interpretation - E.K., G.M.; Literature Search - E.K., G.M.; Writing Manuscript - E.K., G.M.; Critical Review - E.K., G.M.

Conflict of Interest: The authors have no conflicts of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

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