

# Health Behaviors Among High School Girls

Minoo Motaghi<sup>1</sup>; Mansoureh Afsar<sup>2,\*</sup>

<sup>1</sup>Department of Nursing, Faculty of Nursing and Midwifery, Isfahan (Khorasgan) Branch, Islamic Azad University, Isfahan, IR Iran

<sup>2</sup>Department of Nursing, Isfahan (Khorasgan) Branch, Islamic Azad University, Isfahan, IR Iran

\*Corresponding author: Mansoureh Afsar, Department of Nursing, Isfahan (Khorasgan) Branch, Islamic Azad University, Isfahan, IR Iran. Tel: +98-9303475328, Fax: +98-313534060, E-mail: mafsar448@gmail.com

Received: October 29, 2014; Accepted: December 20, 2014

**Background:** Improving health-related behaviors maintain function and independence and improve the quality of life and reduce health care costs. The characteristics of puberty in girls, their physical and mental conditions during this period, and also their essential role in fertility underline the great importance of health care in adolescent girls.

**Objectives:** The aim of this study is to determine the health-promoting behaviors in high school students in district 2 of Isfahan.

**Patients and Methods:** This descriptive study was conducted on 500 high school girl students selected by multi-stage random sampling in district 2 of Isfahan. The data collection was based on standard questionnaire of health promoting behaviors (HPLPII), filled by the participants which was analyzed using descriptive and inferential statistics by SPSS win/11.

**Results:** The findings of this study indicated that the total mean score of health promoting behaviors in students was  $71.2 \pm 21$ . The highest score gained by the studied population was related to the spiritual growth ( $19.7 \pm 6.1$ ) and the lowest score to physical activity ( $6.1 \pm 4.7$ ).

**Conclusions:** Considering adolescence period as a foundation for the future life and society's health, providing appropriate hygienic, consultation and educational services to adolescents and their families should be emphasized and included in the hygienic schedules of schools.

**Keywords:** Health; Behaviors; School

## 1. Background

The health promotion is considered essential for humans and their lifestyle is the most important factor in promoting health and preventing disease and mortality (1). The health promoting behaviors are regarded as the major criteria that determine the health and are directly related to preventing many diseases, and promoting health (2). Some hygienic measures, include immunization, efficient sleeping pattern, enough exercise, proper nutrition and personal hygiene. On the other hand, the lack of physical activity and movement and wrong nutritional behaviors lead to diseases and mortality in all ages, including adolescents. However, adolescence has been considered as the prime of life, which is usually deprived from health services and disease preventive measures more than other age groups (3). Promotion of health-related behaviors leads to maintaining function and independence of humans, improve the quality of life and reduce the health care costs. In addition, 53% of deaths in one way or another are associated with lifestyle and unhealthy behaviors. However, many healthy and unhealthy habits are formed in childhood and can be extended to the later stages of life. Unfortunately, according to surveys conducted by the National Youth Organization, 51% of studied adolescents have unhealthy behaviors (3). Usually, health-threatening behaviors are

increased in adolescence where many people are exposed to health threatening lifestyle such as increasing consumption of foods, reduced physical activities, and also rising physical vulnerability that is detrimental to future health. Nonetheless, researches show that counseling and changing the adolescent's behavior can improve their mental and physical health and prevent many health-related problems (4). According to the census conducted in Iran in 2006, age group of 15-24 years was about 25%, which dropped to about 20% in 2011 (5). This significant wealth of adolescents in Iran demands accurate planning and attention to their health and growth (6). Teenagers experience many social problems, and undergo physical, psychological, emotional and psychological changes during puberty. However, few studies have focused on health-related conducts of adolescents and their problems, and most investigations relate to health problems such as smoking and obesity (7). Monitoring the health of adolescent girls is of paramount importance, considering characteristics of puberty in girls, and their physical and mental conditions and their basic role in productivity in this period. In other words, puberty can be regarded as a foundation and directive for the future of adolescent girls, and exert direct impact on their families and children (8). Understanding the health-related

behaviors of adolescents and fulfilling their health needs will allow the health care officials and planners to design programs for making accurate assessment of their health needs based on the main context and to take appropriate measures for planning and allocation of resources and facilities (6).

## 2. Objectives

Therefore, as the health of adolescent girls is closely linked to the health and attitude of their families and their emerging behaviors, considering the limited number of studies performed in this connection, the present research attempted to explore the health-promoting conducts among high school girls which can also affect their family's health promoting attitudes.

## 3. Patients and Methods

This is a descriptive cross-sectional study of 424 school girls that aims to investigate their health-promoting behaviors in academic year 2013-2014, according to the following formula:

$$n = (z^2 s^2) / d^2$$

where  $z$  is the reliability coefficient of 95%, which is 1.96,  $s$  is the estimation of standard deviation of health promoting behavior score in girl students of high school which got 21 in a preliminary study performed on 30 students, and  $d$  is the wrong estimation which considered to be two scores. Having taken the loss (by loss we mean the extra questionnaires decided over 424 samples who might not answer it) into account, the sample size under study included 500 subjects who answered the questionnaire. A multi-stage random sampling method was used for data collection. Then, four high schools among 17 female high schools were randomly selected in region 2, of which three were public schools and one private high school. Stratified random sampling was used to select students. For this purpose, the total number of students was calculated. The sum of students of these four selected girl high schools were 1650 subjects of whom 419 were first year students that represented 25.4% of total, 465 (28.2%) in second year, 406 (24.6%) in third year, and 360 (21.8%) were in the university preparatory school. Since a sample size of 500 students needed for our study, 127 students from the first year, 141 from the second year, 123 from the third year, and 109 from the university-preparatory school were randomly selected from each group in the four randomly-selected high schools. Before starting the study, the researcher informed the students about the purpose of the research, and having obtained their consent, they were asked to complete the study's questionnaire. Data were collected using standard questionnaires for health-promoting behaviors (HPLPII). The original English version (HPLPII) is a 52-item instrument that measures a health promoting lifestyle in six subscales based on 'Pender' health promotion model framework developed and refined (9). These tools enable researchers

to examine the patterns and determinants of health-promoting behaviors and evaluate effective interventions on changing lifestyle. Walker et al. calculated Cronbach's alpha (0.92) for the total instrument and for the branches 0.70 to 0.90 (10). The reliability and validity of the questionnaire had been measured in Iran by Mohammadi Zaidi and calculated Cronbach's alpha coefficients (82 %) for the entire instrument (11). In this study, Cronbach's alpha for the entire instrument was 0.91. The questionnaire HPLPII contained 52 questions which measured health promoting behaviors in six dimensions, including nutrition (7 questions), physical activity (7 questions), responsibility for health (13 questions), stress management (7 questions), interpersonal relations (7 questions), and spiritual growth (11 questions). Total scores ranged between 0 and 156 points. Then the mean score of each area was compared with the average scores of that area, using one sample  $t$  test. To define the highest and lowest scores of the health promotion behaviors in studied samples, the total score that each sample could achieve in each area was considered equivalent to 100 and participants' scores in each area was calculated by:

$$n = (\text{Total score } 100) / (\text{Earned score})$$

Where,  $n$  represented the total score achieved. The data were analyzed using descriptive (mean and standard deviation) and inferential statistics (one-sample  $t$ -test) by SPSS win/11.

### 3.1. Ethical Considerations

In addition to explaining the aim of the study to all students and obtaining their informed consent, they were assured about the confidentiality and protecting all submitted information.

## 4. Results

The studied population included 500 high school students of region 2 of Isfahan, and aged from 14 to 18 years. The total score mean of health-promoting behaviors in reviewed students was  $71.2 \pm 21$ . The highest average score related to the growing spiritual and self-actualization ( $19.7 \pm 6.1$ ), and the least mean score was that of physical activities ( $6.1 \pm 4.7$ ). In the areas of stress management and responsibility for health, the total score of health promoting behaviors was less than the average. Regarding nutrition and interpersonal relationship this score was average and higher than average, respectively (Table 1). The findings suggest that, in the area of spiritual growth, the highest mean score was related to the option "feel connected with some force greater than myself" with mean score 2.31; and the lowest mean score referred to the option "balance time between work and play" with mean score 1.21. In the area of responsibility for the health, the highest average score was related to the option "question health professionals in order to understand their instructions" with mean score 1.86 and its lowest mean scores belonged to the option "check

my pulse rate when exercising" with mean score 0.48. Based on findings, in the area of interpersonal relations, the highest mean score related to the option "touch and am touched by people I care about" with mean score 2.04 and the lowest mean score connected with the option "settle conflicts with others through discussion and compromise" with mean score 1.59. The findings, in the area of stress management, suggest the highest mean score was that of the option "get enough sleep" with mean score 1.86, and the lowest mean scores referred to the option "practice daily relaxation or meditation

from 15 to 20 minutes" with mean score 0.22. Based on the results connected with the area of physical activity, the highest mean score was that of option "reach my target heart rate when exercising" with mean score 1.27, and its lowest mean scores referred to the option "follow a planned exercise program" with mean score 0.54. The results, in the area of nutrition, showed that the highest average score related to the option "eat breakfast" with mean score 1.92 and the lowest mean score associated with the option "eat 3-5 servings of vegetables each day" with mean score 0.99 (Table 2).

**Table 1.** Mean Scores of Health Promoting Behaviors in Different Dimensions

Dimensions of the health promoting behaviors	Mean ± SD	Average	Total Score	One Sample t-test	
				t	P Value
<b>Spiritual growth and self-actualization</b>	19.7 ± 6.1 <sup>a</sup>	16.5	59.7	11.98	0.001
<b>Responsibility for health</b>	14.2 ± 7.1	19.5	36.4	16.6	0.001
<b>Interpersonal relationships</b>	14.1 ± 4.3	12	58.7	10.97	0.001
<b>Stress management</b>	6.1 ± 3.2	9	33.9	19.91	0.001
<b>Physical activity</b>	6.1 ± 4.7 <sup>a</sup>	10.5	29.05	21.14	0.001
<b>Nutrition</b>	10.1 ± 3.8	10.5	48.1	1.39	0.166
<b>Total score</b>	72.2 ± 21	78	45.6	7.14	0.001

<sup>a</sup> The highest average score in the spiritual growth and the lowest mean score in physical activities.

**Table 2.** The Maximum and Minimum Scores Acquired from Health-Promoting Lifestyle Profile II

Dimensions of the health promoting behaviors	Questions Related to Maximum and Minimum Score in Each Dimension	Mean ± SD
<b>Spiritual growth and self-actualization</b>		
Maximum score	feel connected with some force greater than myself	2.31 ± 0.86
Minimum score	Balance time between work and play	1.21 ± 0.96
<b>Responsibility for health</b>		
Maximum score	question health professionals in order to understand their instructions	1.86 ± 1.04
Minimum score	check my pulse rate when exercising	0.48 ± 0.78
<b>Interpersonal relationships</b>		
Maximum score	touch and am touched by people I care about	2.04 ± 0.93
Minimum score	settle conflicts with others through discussion and compromise	1.59 ± 0.96
<b>Stress management</b>		
Maximum score	get enough sleep	1.86 ± 1.02
Minimum score	practice relaxation or meditation for 15-20 minutes daily	0.22 ± 0.58
<b>Physical activity</b>		
Maximum score	reach my target heart rate when exercising	1.27 ± 1.03
Minimum score	follow a planned exercise program	0.54 ± 0.89
<b>Nutrition</b>		
Maximum score	eat breakfast	1.92 ± 1.02
Minimum score	eat 3-5 servings of vegetables each day	0/93 ± 0/99

## 5. Discussion

The results showed that the mean total score of health promotion behaviors in the studied students were  $71.2 \pm 21$ , that is lower than average. In the study of Raiyat et al. performed on guidance school students, the majority of samples exhibited moderate health behaviors (3). This difference in results might be due to the cultural differences of samples or the absence of health mentors in examined schools. The results showed that the highest average score was in the spiritual growth and self-actualization dimension. In many studies (3, 12-18), the spiritual growth and self-actualization dimension showed the highest score, which is consistent with the results of this study. The high score of students in the spiritual growth and self-actualization is consistent with the Islamic culture of society and religion-oriented behaviors of the family. Islamic culture which is dominant in society and religious families play important roles in psychological health and promotion of spiritual growth that leads people to a purposeful lifestyle along with progressive trust in God (3). The results suggest that the studied students believed in God and supernatural powers, which is consistent with our Islamic culture. Also, the results showed that students studied were weak in the context of creating a balance between work time and activities, which indicates the importance of families and teachers in correct planning for leisure time and youth activities. The study of Motlagh et al. (12) who surveyed the health promoting behaviors of students in Yazd showed that more than half of the students felt that they were growing and changing in a positive direction. They also believed who have correlation with some powerful things, and have purpose and hope in their lives and also have knowledge of what was important in their lives, are consistent with the results of present study (12). The studied students were lower than average in the area of accepting responsibility regarding health matters, which was in agreement with the results of other studies (3, 4, 19, 20). In the study by Can and colleagues (2008), the score in all aspects of health behaviors in 4th-year nursing students was higher than that of students in other fields (21). In a four-year long study by Alpar et al. (2008), on changes in health promoting behaviors in nursing students in Turkey, it was demonstrated that the highest average score was allocated to the responsibility for health (22). These results were inconsistent with those in the present study that suggests a higher age, education, knowledge and awareness increased the responsibility for health. Probably, the reason for low scores in the area of responsibility for health in students of this study is the young ages, and stress and anxiety due to the university entrance examination and lack of health educators at schools. Results of study Langford et al. (2014) show that interventions using health Promoting Schools (HPS) approach were able to reduce students' body mass index (BMI), increase physical activity and fitness levels, improve fruit and vegetable

consumption, decrease cigarette use, and reduce reports of being bullied (23). The results, in the area of responsibility for health, suggest that studied students are curious about their own health and are interested in gaining most information about their body and its functions. These findings can be important enough to teach in schools, and to families, community health nurses, teachers, and other health care workers to efficiently raise awareness of health behaviors in adolescents. The result of this study was in agreement with the study of Raiyat et al. in the area of responsibility for health, that showed only 4.1% of students, regardless of gender had health check once a month, for detrimental physical changes in their health and consult health personnel on how to take care of their health (3). The health behaviors of studied students regarding interpersonal relationships were higher than average. The study of Pour Vakhshoori et al. in Guilan University of Medical Sciences investigated the relationship between self-efficacy and health behaviors in the faculty members, showed the highest score in interpersonal relationships (24). They also indicated that the social relationships and interaction between individuals improved with increasing age, education, and individual's awareness. Also, their findings showed that studied students had emotional support of family and friends; but could not solve their problems through dialogue and agreement with other people. A possible reason for this was that the students were girls who felt more embarrassed than male students to fully express their problems (especially the negative problems), a condition demanding training in interpersonal skills. In a study of Motlagh et al. (12) more than half of the students had a good interpersonal relationship. Girl students spoke to their families about their problems more than boy students, however; for boy students it was easier to show their concerns and interests. Girl students are supported more than boy students by their family, friends and neighbors. The mean score of interpersonal relationships in girls was higher than boys (12). In the area of stress management, the health behavior in the studied students was lower than average. In the study of Raiyat et al., the majority of students had average level of stress management (3). The study of Norouzinia et al. suggested an inverse relationship between the levels of anxiety and the health-promoting behaviors. In this dimension, the students with non-academic education had a higher mean score (14). These findings suggest that families should have program, training, and entertainment of adolescents and supervision on the hours of reading and non-academic study of youngsters in order to maintain a balance between these entities and prevent stress and anxiety related to exams and lessons. The results showed that students, in the area of stress management, get sufficient sleep that had positive impact, because a low amount of sleep causes stress and anxiety. Also the results

of this study suggested that students did not use yoga for relaxation, which was not unexpected since yoga is not common practice in Iran. In study by Raiyat et al. in the area of stress management, 27.1% of teenage girls and 26.9% of adolescent boys had sufficient sleep, which is consistent with the present study (3). Hygienic behaviors of Students surveyed in this study were lower than the average in respect of physical activities, and gained the lowest mean score. These findings are consistent with many studies (24-33) The data suggests that in the area of physical activity, planning throughout country such as creating adequate facilities and spaces and improved cultural conditions including motivating and involving cooperation of media seems essential to resolve existing problems. Our results in the area of physical activities indicated that studied students were physically healthy and had a normal heart rate during exercise, but had no regular program for exercising. This shows the important role of the family and schools in planning for exercise and the leisure time and sport hours of teens in schools. Based on the study of Motlagh et al. (12) boys and girls followed a regular exercise program. The mean score of physical activity in boys was more than girls which was statistically significant ( $P < 0.001$ ). The studied students were moderate in the area of nutrition. According to the reported results by Raiyat et al. (3) the health behaviors of boys and girls students in guidance school were favorable in the area of nutrition, and boys performed better than girls in this area. A higher score of guidance school students in the nutrition area may be related to the lower age of the students who copied their parents more efficiently. The evidence shows that the pattern of correct food consumption on the part of patterns such as using fruits, vegetables and not high-fat and fast foods leads to proper dietary habits in teen girls (34). This indicates the positive impact of family and the foods planning on the lifestyle of adolescent girls. The results in the area of nutrition showed that studied students insisted on eating breakfast, which is beneficial to health, because lack of breakfast and consuming poor quality diet like chips and snacks increases weight and deteriorates the performance of students at schools. The results of the study suggest that students did not care using too much vegetables, which demands educating by parents, teachers and community health nurses. Based on the study of Motlagh et al. 74% of boys and 65% of girls eat breakfast, which is consistent with the results of our study. 25.3% of students consumed 3-5 unit vegetables daily, and boys consumed vegetable more than girls, which was statistically significant ( $P = 0.01$ ) (12). The results of this study indicated that in most respects the score of health behaviors in studied samples was less than moderate. Low scores of health behaviors, particularly in regard to physical activity, stress management and health responsibilities, is probably due to the younger age of the students, the culture of families, the stress and anxiety resulting from the university entrance exam-

ination and also lack of health educators in schools. School and community health nurses play key roles in health promoting behaviors in adolescents (35). The findings suggest that health behaviors in studied samples regarding stress management, health responsibility and physical activity, especially in the area of physical activity, were under moderate, which is probably due to lack of awareness among students and their families in health promotion and the improvement of health by proper behaviors. As a result, the findings of this study can help educational planners and educational consultants to increase awareness and knowledge of students and their families in promoting healthy behaviors, especially in the aforementioned aspects. According to the results of this study about low scores of health behaviors among high school girls (particularly in the areas of physical activity, stress management and health responsibilities), underline the important role of families in reducing the dangerous behaviors of youngsters and improving the health, and education of families and adolescents. Considering the fact that the half of students' time is spent at school, these measures raise their awareness whenever necessary. and also, and taking into account the critical role of health behaviors in the prevention of disease and improving the quality of life, the implementation of health education programs is recommended to promote the knowledge and healthy behaviors of students. This can be realized by including health education program in the school curriculum, and achieved by collaboration between students, families and school health educators and community health nurses, which demands paying attention to follow up and educating the students about appropriate health behaviors. Finally, the school health educators in schools play an important role in counseling and increasing the awareness of families and improving the student's behaviors.

## Acknowledgements

The authors are grateful to Faculty of Nursing and Midwifery, Islamic Azad University (Khorasgan branch), and the education offices in two regions of Isfahan for supporting this research as well as the high school students for their enthusiastic cooperation in this study.

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