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# Health Promoting Life style and its Related Factors in Adolescent Girls

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**ABSTRACT**

***Background & aim:*** One of the main strategies for keeping health is having healthy life style. Due to important role of adolescent health in community health promotion, this study aimed to determine health promoting life style in adolescent girls of high schools and its associated factors in Mashhad, Iran.

***Methods:*** This cross-sectional study was conducted on 810 girls ranging in age from 14 to 18 years old, who were studying in high schools and selected using cluster sampling from in Mashhad, Iran in 2013. They completed a demographic questionnaire as well as Adolescent Health Promotion (AHP) scale. Data were analyzed by statistical tests of Mann-Whitney U, Kruskal-Wallis, Freedman, Wilcoxon, Spearman correlation coefficient and General linear model.

***Results:*** The mean age of subjects was 15.51±0.98 and the mean score of life style was 63.92±12.01. The highest score of life style subscales was allocated to the spiritual growth or life-appreciation (77.66±15.56) and the least to the physical and sport activities (51.66±22.49). There was a significant relationship between the life style score of adolescents with parents' educational level (mother P=0.024, father P=0.014). However no significant relationship was found between adolescents' life style and their residential area and also parent's job. Among different dimensions of life style, the highest correlation was seen between spiritual growth and life style total score (P=0.01).

***Conclusion:*** Based on the findings, it is necessary to prioritize implementing of health-related educational programs in order to changing and modification of unhealthy life style related factors, with focus on sport activities as well as health and nutrition. Also it is needed to provide special facilities to select healthy living behaviors among adolescents.

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## Introduction

Nowadays, health promotion is increasingly paid more attention (1) and one of the main challenges of countries is providing health care (2) according to the health promotion approaches. So that people could be capable to be responsible for their own health and follow healthy life style (3). This practice should be started from childhood and adolescence and keep individuals safe against major health risk during their life (4). Life style plays an important role in bio-psychological health (5). There is an interlock relationship between health problems and life style. In other words, life style is one of the most important influential factors on individual's health and illness (6). On the basis of statistical data, 53% of deaths are related to the life style (7). Healthy life style causes a balance in life if which a person chooses intentional standards options for himself (8). In fact, healthy life style has been considered as a valuable source for decreasing health problems, promoting health, managing

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stressful events and improving the quality of life (5). The components of life style could be modified by applying related strategies; hence, public health shifted its attention more to inform changing strategies of life style (9). Baba Nejad *et al*. (2012) conducted a study to determine the lifestyle status and its related factors among the students of Ilam University of Medical Sciences, Ilam, Iran. The results suggested that these students had inappropriate physical activity patterns, poor dietary habits, and unfavorable lifestyle associated with parental education, and the results also indicated that there was a stronger correlation between tension parental education and stress control and lifestyle (10).

It is necessary to study related factors to health and healthy life style especially for the adolescents who are the major part of the future generation. It seems that changing and their knowledge, attitude and behavior will change the community health literacy. Therefore, one of the underlying affairs of societies should be focusing on health and education of adolescents (11). It is estimated that around 30% of the world population are 10-24 years old. A around 35.4% of Iranian population (24 million) are adolescents and Iran is one of the youngest countries in the world (15 million adolescent of 10-19 years) (12, 13). According to the census of 2006, this age group (10-19 years old) constitutes 15.4 million or around 21.8% of the Iranian population (14). Therefore, the national health programs should emphasize on this group especially female adolescents. Considering that the base of most effective health behaviors and life styles are formed during the adolescence period, they could considerably affect the future burden of the diseases because the disease patterns have been changed and illnesses related to unhealthy life style are at the top of lists of total diseases in Iran(4).

World Health Organization has predicted that life style is responsible for around 70%-80% of mortality rate in developed and 40%-50% in developing countries (15). Considering the fact that the attitudes and behaviors of students which is said to be formed during young adulthood (16) are often a determinant of healthy lifestyle habits, and helping adolescents makes healthy lifestyle choices and preventing them from malicious behavior is crucial. Besides, in order to prevent these malicious behaviors, healthy lifestyle should be established in adolescence (4). Several studies have showed the effects of personal, familial and social related factors on high risk behaviors (17-19), however, there is little information about health promoting behaviors of adolescents especially on their related factors, although similar studies have showed gender differences in health promoting behaviors (20).

Thus, recognition of adolescent's views and perspectives in relation to a particular type of life style provides opportunity for health authorities evaluate different types of adolescents' life style as well as planning appropriate preventive approaches in order to develop adolescents' capabilities. On the other hand, schools could provide appropriate atmosphere for teaching healthy life styles to adolescents and as a result will influence the community health (11). So this study aimed to study the life style of female adolescents and its related factors in Mashhad high schools, Mashhad, Iran.

## Materials and Methods

This cross-sectional study was conducted on 810 female adolescent of Mashhad high schools (1st, 2nd and 3rd grades), who were selected using cluster sampling. Student were enrolled from 16 urban (nine governmental and seven non-governmental) and three rural high schools (all governmental). Random number table was used to select these schools. In high schools, classes were selected randomly.

Inclusion criteria were consent for participation in the study, to be Iranian and resident of Mashhad, age of 14-18, studying at 1st, 2nd or 3rd grade of high school and getting scores less than 20 from Strength and Difficulties Questionnaire (SDQ). Any student with mental disorder, history of medical condition either acute or chronic and severe illnesses or disability, were excluded from the study. The study tools included demographic data questionnaire and Adolescent Health Promotion questionnaire (AHP) in six dimensions of 1) nutrition behavior 2) interpersonal communication or social support 3) health responsibility 4) spiritual growth development

or life-appreciation 5) stress management and 6) physical and sport activities with 40 questions which were graded based on 5-point Likert scale from never (1) to always (5).

The raw score for each of the six AHP dimensions was derived by summing the item scores, and converting it a value from 0 to 100. The higher scores indicated more desirable life style. Wang *et al*. (2007) confirmed its reliability in all aspects by alpha Cronbach's coefficient. It was reported as 0.7 in all subscales except nutrition which was 0.684 (21). The validity of AHP was confirmed by content validity and the reliability was confirmed by measuring internal consistency for each part and the entire questionnaire (r=0.88) were determined. To collect data, firstly the researcher introduced herself and the objectives of the study to the subjects. Then students signed a consent form and then asked to complete the questionnaires.

After data collection, all forms were coded and entered into a computer, then were analyzed by SPSS version 11.5 using descriptive statistics and Man-Whithney U, Kruskal-Wallis, Freedman, Wilcoxon, Spearman correlation coefficient and General linear regression (α=0.05).

## Results

Among the adolescents aged 14-18 years, the mean age was 15.5±0.98. 90.5% of subjects were living in Mashhad and 9.5% were living in rural areas. Family size was 2-13 members (4.74±1.3). The most populated ones (38.5%) were 4-member families. Birth order was between 1 and 11 (2.25±1.6) and the most frequent order (42.6%) was one. 92.8% of the students were living with both parents. Most of mothers (32.4%) and fathers (30.5%) had high school diploma, 77.7% of the mothers were housewives and 49.4% of the fathers had no governmental job and 77% of them had enough income for their lives. Total score of adolescents' life style was 63.92±12.01. The mean of each subscale of health promotion life style was less than 80. The maximum scores were related to the subscales of spiritual growth or life-appreciation (77.66±15.56), interpersonal communication or social support, stress management and nutritional behaviors, respectively. The minimum score was related to the physical activity and sport (51.66±22.49). The maximum was related to the spiritual growth (5.20) and the minimum to the physical activity and sport (2.41). Table 1 shows mean, standard deviation, median, mean score of life style and its subscales.

Freedman test showed significant difference among scores of life style. Wilcoxon test compared each two subscales and Bonferni modification was also conducted. Based on the results, a significant relationship was found between all subscales (P<0.001) except of stress management and nutrition. The maximum significant relationship was found between spiritual growth and life style (P=0.01, r=0.754).

**Table 1.** Mean standard deviation, median, and the mean score of lifestyle and its dimensions

| Dimensions | Mean±SD | Median | Mean Score |
|---|---|---|---|
| Nutrition behavior | 61.61±15.13 | 62.5 | 3.27 |
| Social support | 68±16.71 | 69.34 | 4 |
| Health-responsibility | 56.98±17.98 | 56.25 | 2.75 |
| Life-appreciation | 77.66±15.56 | 81.25 | 5.20 |
| Exercise behavior | 51.66±22.49 | 55 | 2.41 |
| Sterss-management | 62.65±17.69 | 62.5 | 3.37 |
| Total Life style | 63.92±12.01 | 65 | - |

**Table 2.** The correlation matrix of the related variables associated with adolescents lifestyles

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Nutrition behavior | 1.000 | | | | | | |
| Social support | 0.209 | 1.000 | | | | | |
| Health –responsibility | 0.439 | 0.208 | 1.000 | | | | |
| Life –appreciation | 0.335 | 0.335 | 0.411 | 1.000 | | | |
| Exercise behavior | 0.277 | 0.189 | 0.463 | 0.403 | 1.000 | | |
| Stress-management | 0.324 | 0.233 | 0.454 | 0.598 | 0.447 | 1.000 | |
| Total life style | 0.588 | 513.0 | 0.753 | 0.754 | 0.675 | 0.743 | 1.000 |

The relationship between other subscales of life style was also measured. Based on the results, the maximum correlation was found between spiritual growth and life-appreciation and stress management (P=0.01, r=0.598) (Table 2).

All variables were entered to the General linear model in order to control confounding variables. At first all confounding variables entered General linear model independently as independent variables and the main variables as dependent variables in several steps. Finally fathers age (P=0.027 and β=-0.142) and SDQ score (P=0.000 and β=-0.914) showed significant correlation (P<0.05). Also studying in governmental high school (P=0.000, β=4.262), living with parents, educational level of father and mother below high school diploma and income less than living expenses all showed significant relationships (P<0.05).

## Discussion

According to the results, the mean score of all subscales of health promoting life style was less than 80. It was less than 60 for responsibility for health and exercise behavior. The maximum score was related to the spiritual growth, interpersonal communication or social support, and stress management, respectively. Nutritional behaviors, responsibility for health and physical activity, and sport got lower scores. This result is in agreement with Wang *et al*. (2009) study which was conducted on health promotion life style of university of Kuangju in China (21). The maximum score of students was related to spiritual growth which may be associated with the culture and belief system of the community. This results are also similar to studies conducted on students of Turkey, Yazd and Isfahan, and also on nursing students in Turkey, and Hong Kong (22-26). In study, by Motlagh *et al.* (2011) the highest score was related to spiritual growth and interpersonal communication or social support (23). Interpersonal communication which provide social support and intimacy is considered as definite index of health status. Due to the importance of inter personal communication and making social capital, it is necessary to keep and maintain it in adolescents by approaches such as life skills education, especially active listening, effective conversation and empathy. The third score in the present study was related to stress management and the results of the study were consistent with the studies of Wang (2009) and Ortabak (2011). But it was ranked as fourth and fifth, in the studies of Tol (2011) and Motlagh (2011), respectively (21-24). The difference may be due to the students' academic life which is associated with greater stress and require more independent decision-making by the students. To achieve personal growth and the required perseverance needed to oppose life stress and to create healthy interpersonal relationships, they will commonly encounter several challenges, due to its importance in health and quality of life. It is of priorities for the study group. The minimum score in the present study was related to the physical activity and sport. Wang *et al*. (2009), Ortabak *et al*. (2008), Motlagh *et al*. (2011) and Tol *et al*. (2011) also confirmed this result. In their study the lowest score was related to physical activity which is in agreement with studies conducted in Kuwait and Turkey on university students (21-24, 27, 28). Sedentary life style is a common problem among adolescents and indicates that it is not integrated in daily living of the students. One of its potential reasons is in heavy study homeworks which take more time and energy. On the other hand, internet and computer which are the other options for entertainments are popular among adolescents and decrease interest to sport activities.

Shortage of sport equipments and facilities could be considered as the other reason which anticipates lack of participation in sport activities. Based on the results, health care providers should encourage adolescents to do more physical activities. Also educational organizations should provide sport fields and develop sport facilities and equipments in the schools and increase sport hours for adolescents especially females in high schools. In the present study, responsibility for health got the second low-rank score. Two points should be noted: first, the adolescents who were studied were young and their health status was in high level and their experience of illness was very low. On the other hand, physical problem in this age group was low, however, for the reason that teenagers usually live with their parents; they can be supported by them. Hence, it seems that

the lower score could be as a result of that. This result is in agreement with Wang *et al*. (2009) and Motlagh *et al*. (2011) studies (21 and 23), however, it has got second rank in Tol research (2011) (24). Due to low level of students' responsibility for health, it is necessary to plan a comprehensive plan for changing students' behaviors. The rank of nutrition was like the previous studies (21, 23, and 24). Nutritional patterns of adolescents were of crucial concerns. They usually had no breakfast. In present study, just 50.9% had breakfast while spent long time in school and had fast food for snacks. They also had candies with not enough nutritional value or healthy foods.

Proper healthy nutrition could cause psychologically well-being as well as growth and development. On the minus side, improper unhealthy nutrition could lead to some disorders in next decades of life, some diseases, and disorders rooted in adolescents' period of nutritional status (29). It is necessary to inform students and their families of healthy nutrition principles and application of different methods for nutritional education in order to modify and correct wrong nutritional habits. In the study of Ortabak (2011), this dimension has achieved the equal rank with physical activities and sports, and it has been located in the lowest rank. These variations could be due to the differences between eating patterns in two communities (22).

Correlational analysis between life style and other variables showed maximum correlation between life style and spiritual growth and then responsibility for health. Mohammadian (2013) reported the maximum correlation for responsibility for health. The difference could be due to different scales. They did not apply subscales of spiritual growth and interpersonal communication in their study (30). A significant relationship was found for interpersonal communication or social support in their study (30). A significant relationship was found between life style and parent's educational level. Mohammadian *et al*. (2013) confirmed this result (30). Babanejad *et al*. (2012) also indicated a significant relationship between students' life style and educational level of their fathers (10). Rahnavard *et al*. (2006) and Motlagh *et al*. (2011) showed a significant relationship between health promotion behaviors and educational level of mothers (31, 23). Mazlomy Mahmoodabad *et al*. (2005) (32) and Mansourian *et al*. (2009) (33) also found significant relationship between life style and educational level of fathers. Ortabak *et al*. (2011) conducted their study on health promotion behaviors and high risk behaviors of Turkey young people; the mean score of responsibility for health subscale in students with higher educational level of mothers was significantly higher than student whose mothers had lower educational level (22). Chen *et al*. (2007) (34) showed that the mean of social support and nutrition subscales in students whose mothers studied more than 13 years was significantly higher than students whose mother studied less than 13 year, however, adolescents of Taiwan showed no significant difference in terms of educational level of mothers (34).

No significant difference was found between the total score of life style and field of study, age and residential place. Babanejad *et al*. (2012) also confirmed this result (10). Peker and Bemark (2011) (35) and other studies (36 and 37) also showed no relationship between total score of life style and age and residential place. Mansourian *et al*. (2009) also found no relationship between life style and age (33). However, Mohammadian *et al*. (2013) found negative significant correlation between life style and age (30).

Similar age of participants, 14-18 years old, could be a good reason for lack of relationship between age and life style in the present study. No significant relationship was found between life style and parents' job. Ortabak *et al*. (2011) also showed no significant relationship for mothers' job (22).

Important information could be obtained through recognizing and understanding adolescent's life style in order to promote health in both families and their educational atmosphere. Health promoting life style could provide a comprehensive and extensive spectrum of health for adolescents; authorities could provide interventional programs for healthy life style based on the present condition for students. This study had some limitations. The responses to the questionnaires were self-reported which probably result in wrong answers. Also this study just focused on girls.

As subjects were Iranian and were living in Mashhad and the sample size and randomization issues were considered, in this study the results could be generalized to Iranians. Thus, it is recommended to conduct a study in order to provide a comprehensive and practical guideline for the development of health promoting life style for the adolescent's. This guideline could be applied as a tool for all stakeholders who are involved with adolescent's life style either directly or indirectly including governmental, private; or non-governmental organizations as well as parents, relatives, teachers and even students.

## Conclusion

According to the results of study, it should be a top priority for authorities and health care managers to train healthy life style to the students of and provide them facilities to choose healthy behaviors.

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### Conflict of Interest

The authors declare no conflicts of interest.

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