Research Paper

Health Needs of Adolescents in Aran va Bidgol City, Iran

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ABSTRACT

Background: Considering the importance of adolescents' health and that the 1st step in designing a comprehensive health plan is to assess the needs of the target group, this study was conducted to determine the health needs of adolescents in Aran va Bidgol City, Iran.

Methods: This Cross-sectional-analytical study was performed on 497 students (265 girls and 232 boys) aged 12-18 years studying in one of the 1st and second-grade high schools in Aran va Bidgol City in 2016. The sampling method was clustering. The data collection tool used in this study was the adolescent health needs questionnaire which was a standard and psychometric instrument by Iranian culture. Data were analyzed using SPSS software, version 16 using descriptive statistics and a Chi-square test at a significance level of 0.05.

Results: Participants in the study were 53.30% girls and 46.70% boys. The Mean±SD score of students' health needs in order of priority included nutrition (22.09±3.80), physical activity (10.19±2.90), health education services (64.30±15.90), healthy communication with parents (44.60±7.60), personal hygiene (21.10±2.71), mental health and counseling services (52.50±7.90) and spiritual health (21.90±3.70). Girls felt more of the need of healthy communication with their parents and boys in the area of personal hygiene.

Conclusion: By the results of this study, communication between parents and children, health-related educational needs, personal hygiene, sleep, and spiritual health are some crucial issues that should be followed up in adolescents.

Keywords: Adolescent, Adolescent health, Health, Needs assessment

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1. Introduction

Adolescence is one of the vital and valuable periods of every person's life. This stage is the beginning of physical, mental, and social changes that affect his performance in adulthood and will lead to the creation of different needs for this age group [1]. A total of 1.3 billion adolescents in the world today, more than ever before, constitute 16% of the world's population [2]. In Iran, according to the 2016 census, about 12.5% of the population was between 10 and 19 years old [3]. Also, the adolescents aged 10-19 years were 14.3% in Aran va Bidgol City in 2014 [4].

Understanding the health needs of adolescents is critical in promoting strategies to prevent high-risk behaviors in adolescents and provide care services to them [5]. Needs assessment is the cornerstone of health promotion programs [6] and a systematic process to identify the gap between the current situation and the desired situation or what should be and what is, and ultimately determine the priorities for action and implementation [7].

Despite the importance of health needs assessment in the optimal use of resources, unfortunately, in many developing countries this is not done based on scientific principles and is more based on the tastes of influential and powerful people, such as local professionals and staff or higher. In Iran, the missing link in the needs assessment in the medical and health education planning system seriously threatens the results of educational programs. While the implementation of a specific scientific model facilitates and increases the accuracy and validity of needs assessment [8, 9].

More studies have examined awareness and beliefs about the puberty phenomenon with quantitative methods. A study by Mohammadi et al. (2006) showed that adolescents' knowledge about reproductive and sexual health is limited and sexually transmitted diseases and misconceptions about the dangers of unsafe sex and its consequences are seen [10]. Shah Hosseini and colleagues qualitatively extracted the health needs of adolescent girls. They identified four main themes: the need for family emotional support, the need for responsible parents, the need for informed parents, and the need for family-supervised freedom [11].

Although a qualitative study has been conducted to assess the health needs of adolescents, with the help of quantitative methods, needs and problems can be classified based on criteria, such as urgency, cost, and final impact on health to plan future services. Given the importance of the target age group and the need to conduct such a study at the regional level, the researchers conducted a study to determine the health needs of adolescents in Aran va Bidgol City.

2. Methods

This cross-sectional-analytical study was conducted on 497 high school students aged 12-18 years in Aran va Bidgol City in 2016. The sampling method was cluster random. first, a list of all 53 high schools in the city was prepared. Then, based on the areas covered by the comprehensive health centers of the city and the population covered by them, the number of schools in each area was determined and the schools in each area were randomly selected. In the next step, according to the population of students in each school, the number of students to be selected from each school was determined. Then, according to the number of students studying in each grade, a selectable number in each class was determined, and finally, the students in each class were randomly selected. If each student was eligible and wanted to participate in the study, the questionnaire was completed for them; otherwise, another student was randomly selected and replaced. Considering the number of 6321 high school students, using Cochran's formula and with 95% confidence, the sample size was 465 people, and finally,, 500 students were included in the prediction of possible attrition. Out of 500 completed questionnaires, some questionnaires were left out due to incompleteness, and finally 497 questionnaires were analyzed, of which 265 questionnaires were related to girls and 232 questionnaires were related to boys.

The inclusion criteria of the study included students aged 12-18 years, studying in one of the first and second year high schools in Aran and Bidgol City and willing to participate in the study, lack of accident, divorce, death of a family member in the last period, no academic failure in the last year for any reason and lack of special needs due to illness, disability, etc. The exclusion criteria included incomplete completion of the questionnaire.

The data collection tool included two parts, students' demographic information (age, adolescent education, parents' education, parents' occupation, number of siblings, place of living, living with parents) and the adolescent health need questionnaire. The questionnaire was a psychometric instrument according to Iranian culture, which was designed by Shah Hosseini and her colleagues in 2010. This questionnaire had 65 items that addressed the health needs of adolescents in the areas

of personal hygiene (5 questions), nutrition (6 questions), physical activity (3 questions), mental health and counseling (15 questions), healthy communication with parents (12 questions), school health education (19 questions) and spiritual health (5 questions). Answers were selected based on the 5-point Likert scale [12]. The two optimal conditions and the current status were asked for each expression. According to the current and desired situation, needs were answered. When the difference between these two situations is large, the need is not met. The score was determined after calculating the sum of scores and the difference between the desired and existing part of the needs in the field. The following formula was used to calculate the score of each domain as a percentage and the needs were prioritized based on it [13] Then, according to the contract, the scores were divided into three levels of low (0-33.3), medium (33.3-66.6), and high (66.6-100) in terms of percentage (Equation 1).

$$1.\ \text{Score of each domain in percentage} = \frac{\text{Minimum score-maximum score}}{\text{Minimum score-total score}} 100$$

The validity of the questionnaire was confirmed through the content, face, and construct validity. The content validity of the tool was 0.92. For reliability, Cronbach's alpha coefficient for the whole instrument was 0.9 and the test-retest reliability coefficient was 0.93 [12]. Due to the approval of the questionnaire in Sari City, Iran, and possible cultural differences, the content validity was used to confirm the validity after obtaining the opinions of 15 faculty members of Kashan University of Medical Sciences and experts with knowledge and experience in the field of adolescent health. Also, to determine the reliability of this questionnaire, the bisection method was used so that the questionnaire was completed for 40 students (pilot study), then questionnaires were randomly divided into two parts and the correlation coefficient between the two parts was obtained (r=0.73).

The researcher attended the school with prior coordination with the principals. Questionnaires were given to students in an environment away from any noise and stress. After explaining the components of the questionnaire, and how to answer and score, the students were asked to complete the questionnaire. first, written consent was obtained from all of them to participate in the study, and they were assured that the confidentiality of the information would be maintained and no need was required to mention their names or details. They were also allowed to leave the project if they withdrew from the study for any reason. Data were analyzed by SPSS software, version 16 (SPSS Inc., Chicago, IL, USA) and using descriptive statistics and chi-square test. The significance level of 0.06 was considered.

3. Results

A total of 53.30% of the students were girls and 46.70% were boys. The mean age of the subjects was 15.08±1.59 years. The present study showed that 51.50% of the adolescents were in the first year of high school and the others were in the second year; 77.1% of the students lived in the city. The educational level of 65.8% of mothers and 61.2% of fathers were below the diploma. Students' families (67.8%) had 2 and 3 children. Table 1 presents the mean scores on the necessity for need in different areas based on the opinion of adolescents. Table 1 lists the upper and lower ranges of scores in each area and prioritization of the health needs of the adolescents.

Table 1. Mean scores of adolescent about need necessity in different area and priority in different areas

Need Area \ Score	Minimum	Maximum	Mean±SD	Percentage of Achieved Score	Priority
Nutrition	6	30	22.09±3.8	39	1st
Physical activity	3	15	10.19±2.9	26.4	2nd
Health training in school	19	95	64.3±15.9	26.4	3rd
Healthy relationship with parents	12	60	44.6±7.6	14.5	4th
Personal hygiene	5	25	21.1±2.71	13.7	5th
Mental health and consulting	15	74	52.5±7.9	11.1	6th
Spiritual health	5	25	21.9±3.7	10.9	7th

In terms of personal hygiene needs, the lowest and highest score is related to the amount of sleep per day (3.77±1.20) and access to healthy water (4.70±0.67), in the field of nutrition, the items are giving free school meals (2.33±1.39) and eating breakfast daily (4.56±0.80), in the area of physical activity, the items restrictions on outdoor sports (3.30±1.46) and interest in the sports programs provided (3.50±1.28), in the field of mental health, the items blame the teen by the counselor (2.18±1.60) and keeping a secret by counselor (4.38±0.99), in the field of healthy communication with parents, the items telling teen secrets to others by family (2.24±1.52) and choose the right name by the parents (4.52±1.04), in the field of health education services, the items provide education to adolescents with domestic violence (2.78±1.43) and get personal health education (3.68±1.20), in the field of spiritual health, the items expressing religious issues with reason (4.01±1.15) and God as the refuge of the adolescent (4.64±0.78).

Most students (84.5%) assessed their needs in the field of personal health at a low level. The nutritional needs of 48.90% of students were moderate and 5% of the adolescents reported high nutritional needs. A total of 48.10% of the students had assessed their needs in the field of physical activity as moderate and only 33.60% of them stated that their needs were low. The need of 84.10% of students for healthy communication with parents was moderate to high. The needs of 75.20% of the students in the field of health education services at school were moderate. A total of 19.40% of students stated that the needs of their mental health and counseling were low and 80.60% reported moderate to high. The needs of 80.10% of students in the field of spiritual health were low and the needs of 19.90% of students were moderate to high.

The status of students' health needs was determined according to related factors (age, gender, educational level, education and occupation of parents, place of residence) using a chi-square test and significant cases were listed in the tables. The chi-square test showed the personal health needs of male students were significantly higher than female students (P=0.030) (Table 2). The personal hygiene needs of adolescents living in rural areas were significantly higher than in urban areas (P=0.003) (Table 2). The results of the chi-square test showed the nutritional needs of adolescents living in rural areas were higher than adolescents living in cities (7.90% vs. 4.20%, P=0.005). The need for physical activity of students aged 12-14 years was significantly higher than 15-18 years (P<0.001) (Table 3). The need for physical activity of students living in rural areas was significantly higher than in urban areas (P=0.003) (Table 3).

Table 2. Frequency distribution of adolescents' needs for personal hygiene in terms of demographic variables

variables	Needs	No. (%)		Chi Square Test (P)
		Low	High	
Sex	Male	188(81.0)	44(19.0)	0.030
	Female	232(87.5)	33(12.5)	
Place of living	City	334(87.2)	49(12.8)	0.003
	Village	86(75.4)	28(24.6)	

Table 3. Frequency distribution of adolescents' needs for physical activity in terms of demographic variables

Variables	Needs	No. (%)			Chi Square Test (P)
		Low	Medium	High	
Age (y)	12-14	48(50.1)	104(105.2)	42(44.6)	<0.001
	15-18	119(76.7)	135(90.8)	49(32.4)	
Grade	1st high school	68(26.6)	135(52.7)	53(20.7)	0.003
	Secondary high school	99(41.1)	104(43.2)	38(15.8)	
Place of living	City	141(36.8)	182(47.5)	60(15.7)	0.003
	Village	26(22.8)	57(50)	31(27.2)	

The need for a healthy communication with parents was significantly higher in female adolescents than in male adolescents (38.50% vs. 22%, P<0.001). The need for health education services was significantly higher in female adolescents than in male adolescents (18.50% vs. 9.10%, P<0.001). The need for spiritual health in adolescents over 16 years of age was significantly higher than in other ages (P=0.01).

4. Discussion

The results of the study showed the adolescents' needs in different fields in terms of priority were as follows, nutrition, physical activity, health education in schools, healthy communication with parents, personal hygiene, mental health and counseling services, and spiritual health.

In the present study, the nutritional needs of most students were moderate to low. Adolescents pay more attention to the health of their food than to the appearance of food. Breakfast, meat and legumes, dairy products and fruits, and vegetables were mostly consumed by teenagers. Asalemnejad et al. found that adolescents pay more attention to healthy food and how to serve food [14]. In this study, students needed free school meals and decorated food. The presence of students from morning to afternoon in school, which includes at least two meals, is a great opportunity for principals and officials to improve students' nutritional needs [15]. The difference in the results of the studies can be due to the diversity of lifestyles in different communities, which leads some adolescents to care only about the appearance of food, and some care about the health of food.

Adolescents in this study stated that they were interested in sports but reported restrictions on exercise. They need to remove restrictions on outdoor sports. Low levels of physical activity can affect obesity and subsequent problems in adulthood [16]. It is recommended to equip centers for riding and other exercises for girls and boys to modify weight and prevent further complications. According to the results of the study, inadequate activity and low mobility were more common in adolescents living in rural areas. This may be due to the lack of sports facilities or space for walking outdoors and the lack of attention to this issue in families. The outbreak of COVID-19 also led to fewer teens leaving the house, leading to inactivity and the closure of sports clubs, which multiplied restrictions on physical activity, especially outdoors. Increasing the teaching hours of sports lessons in schools helps to optimize the behavior of students' physical activity [17].

The results of this study showed that the educational needs of adolescents in school are not adequately met. Most studies have focused on puberty needs in girls, and their other health needs have received less attention. The rate of high-risk behaviors of students has been significant, especially in the areas of unintentional injuries, smoking, sex, inactivity, and poor nutrition [18]. The study conducted by Alimordi et al. examined the challenges of girls' health education during puberty and identified girls' lack of knowledge [19]. The need for appropriate educational content in the fields of reproductive health, life skills, and prevention of high-risk behaviors along with appropriate educational methods, improving media performance, and social media participation to educate adolescents and families has been emphasized in another study [5].

As the results of the present study showed, adolescents needed parents with the good relationships who pay attention to their wishes and respect them. They allocated time of day to them and allow them to comment on their own issues under parental supervision. Shahhosseini reported the importance of the role of the family in health needs and raised the need for emotional support of the family and the need for responsible and informed parents [11]. The results of the current study were consistent with Shahhosseini study. A study has shown that 38% of adolescents have a stressful relationship with their parents [20]. In quarantine situations, as has happened in recent years with the constant presence of family members together, conflicts between parents or adolescents' problems with parents lead to behavioral incompatibilities and negative feelings towards family members [21]. Some studies have pointed to a weaker relationship between boys and parents than girls [22], but in this study, girls mentioned more unmet needs than boys and wanted to communicate more effectively with parents, perhaps cultural considerations in the region led to such a difference, therefore it is recommended to conduct specific studies in this area and design programs based on the needs of girls.

In this study, adolescents did not get enough sleep. Also, in Nejat et al's study, adequate sleep was among the physical needs of adolescents [23]. Adequate sleep in adolescents can affect various aspects of their growth and development. Many factors can disrupt normal sleep in them, including age, gender, personal characteristics, nutrition, anxiety, exercise, stress, environment, etc. [24]. In the past few years, due to the outbreak of COVID-19 disease, school closures and home quarantines have occurred, which can affect the physical and mental health of children and adolescents. Their findings show

that children and adolescents do less physical activity, their sleep patterns are impaired and they follow a poor diet when they are on weekends or summer vacations. They will show more severe psychological symptoms, such as acute stress disorder, adjustment disorder, and grief [25, 26]. In this study, it was found that the needs related to personal hygiene were more met in girls than boys, and adolescents living in rural and deprived areas had more unmet needs in this area. In Shokouhinia's study, it was found that girls' knowledge, attitude, and behavior towards brushing is more than boys. Girls are more under the supervision of their mothers at home and receive the necessary personal health education, while boys are less concerned about these issues, and also in rural areas due to a lack of health facilities, this issue is more pronounced and adolescents feel more need. In this study, one of the sources of information for teaching behavior was parents [27]. Therefore, parents of adolescent boys can be trained to improve their health performance.

According to the results of this study, most adolescent students had unmet counseling and mental health needs, including group programs and trainings and the appropriate and non-judgment approach of the counselor. Various studies have emphasized the existence of counseling needs of adolescents, such as counseling for puberty problems, appropriate educational methods, and appropriate educational content [5, 19, 28]. The results of the study of Mirzaei et al. indicated that adolescents need counseling and educational services in the field of various physical, psychological, educational, and social problems during puberty. They have suggested that hours of the week be devoted to counseling by school experts [29]. The study of Sepehrmanesh et al. showed that about 10% of high school adolescents in Kashan were suspected of mental disorders [30] and therefore it is necessary to activate school counseling centers.

According to the results of this study, the needs of students in the field of spiritual health have been met to a large extent. Some of them stated that it is necessary to explain religious issues to them with reason and provide a beautiful manifestation of religion. Shahhosseini et al. found that concepts, such as reliance on God, the need to do homework as inner peace, the need for God as a refuge, and the resource to imams were vital in adolescent girls [31]. Fabricator also found that religiosity plays a mediating role in times of stress and alters the relationship between stressors and mental health [32]. Zeighami et al. in their study stated that the promotion of hopeful resources, such as strengthening the spiritual dimension and hope therapy seems necessary in adolescents to improve their mental health [33].

One of the limitations of the study is its cross-sectional nature because the obtained relationships cannot be considered causal relationships. One of the strengths of the study is the simultaneous study of the needs of adolescent girls and boys, which made it possible to compare the needs of the two groups.

5. Conclusion

Following the results of this study, communication between parents and children, health-related educational needs, personal hygiene, sleep, and spiritual health are some crucial issues that need to be followed up in adolescents, especially by gender and in rural areas. Therefore, it is suggested to prepare comprehensive planning according to the diverse needs of adolescents. It is suggested that educational and intervention programs be designed in a way that leads to effective changes in adolescent behavior and can be monitored and evaluated. Also, depending on the cultural context of each society and socio-economic conditions, needs are different and change over time, it is worthwhile to design research programs in related departments and agencies in such a way that they are updated at reasonable intervals and always meet the needs of adolescents in all programs.

Ethical Considerations

Compliance with ethical guidelines

The study was approved by Kashan University of Medical Sciences (Code: IR.KAUMS.REC.1395.107). Informed writing consent was taken from the participants in the study. This study was conducted within the framework of the research project that approved by Kashan University of Medical Sciences (Code: 95106).

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Authors' contributions

Conceptualization and supervision: Saeideh Nasiri, Azam Bagheri; Methodology: Elahe Lame, Mohammad Mahdavipanah, Leila Darogheh and Zohreh Sadat; Writing, Original draft: Saeideh Nasiri; Review and editing: Elahe Lame, Mohammad Mahdavipanah, Leila Darogheh, Zohreh Sadat, Azam Bagheri; Data collection: Elahe Lame, Mohammad Mahdavipanah and Leila Darogheh; Data analysis: Saeideh Nasiri, Azam Bagheri and Zohreh Sadat.

Conflict of interest

The authors declared no conflict of interest.

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