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The knowledge of Iranian high school girls about needs of puberty and menstruation

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Abstract

Adolescents, especially girls, are of susceptible groups in a community which have not paid enough attention to their needs. The aim of the present study was to determine the knowledge of high school girls about the requirements of puberty and menstruation. This cross-sectional study was conducted on 1000 Iranian girls studied in high schools. They were selected according to a classified-cluster sampling method. A researcher-made questionnaire composed of 44 questions was employed to obtain demographic information and to estimate the puberty and menstruation knowledge level. The results indicated the moderate knowledge of high school girls about puberty and menstruation requirements (50 to 75%). The need for learning the health principles of puberty and menstruation was 97.2% and 85.9%, respectively. The knowledge on the correct way of gentile cleaning was 57.7%. They were mostly learned about puberty and menstruation by their mother (as 51.1% and 54.2%, respectively).There was a significant relation between the knowledge on puberty and menstruation and education level of mother, age of mother, and job of father. Since the knowledge about puberty and menstruation in girls was in moderate level, training programs are necessary for girls in this age range to make them more knowledgeable

Keywords: Girl, Knowledge, Menstruation, Puberty

Introduction

Adolescence is a very important life stage. Indeed, it is a transition stage from child hood to adulthood. This intermediate stage comes along with physical, emotional, mental and social changes that cause a great impact on the social and sexual functioning adulthood [1]. This period is defined by World Health Organization (WHO) the age range between 10 to 19 [2]. Adolescence is one of the most valuable and critical periods of life during which maturation occurs [3]. About1.5 billion people in 2009 were aged between 10 and 25 years old [4] A large part of our country, which comprise over half of the population, are below 25 year old [5]. There is not enough right mechanisms to learn these people how to protect them against consequences of bad reproductive behaviors [6]. The results of various studies in Iran show that the rate of exercise activities, bathing and nutrition ways of adolescence girls are reduced or remains unchanged during menstruation due to the lack of knowledge [7]. A study of Olfati in Qazvin in 2005 showed that the mean score of knowledge among teenage girls was 11% about

genital anatomy and 13 % about physiology of reproduction. Additionally, 61% of them thought that the uterus is a place for storage of the dirty menstrual blood. The knowledge score of girls on the physiological changes during puberty was 35%. 73% of adolescents stated that they need to know more about puberty [8]. The findings of a similar study conducted in Tehran in 2006, showed that the knowledge level of 75.1% of students was low about puberty hygiene [9]. In our society because of cultural constraints, most adolescence especially girls suffer lack of appropriate information on the physical and mental changes during puberty. They may encounter physical and mental problems in their family life because of gaining the required information from unconscious and incredible resources [10]. The widespread availability of new communication technologies (such as Internet, chat and mobile) has facilitated the communication and access way to other cultures.

Although it is forbidden in the country, a significant percentage of young people are using satellites. A study in 2006 showed that 47% of Iranian girls find their friends in internet chat rooms among people who have not correct information [10]. The World Health Organization has identified training of women and adolescent girls as a priority, particularly in the areas of health and hygiene [11].

Therefore, the need for studies dealing with the knowledge of adolescents about health especially in girls about puberty and menstruate hygiene [12]. The obtained results of these studies can be used in combination with health educational programs as the most important and effective solutions for preventing and resolving the problems of puberty [13]. Considering the aforementioned problems, the researchers have sought to conduct a study with the aim of determination of Iranian high school girls' knowledge about the requirements of puberty and menstruation as a step for promotion of knowledge and practice of women and future mothers in our country.

Method

This cross-sectional study was carried out in Dezful city of Khouzestan province (southwest of Iran) on 1,000 high school girls aged from 11 to 18 years, whom were selected based on a classified-clustering sampling method. The city was divided into five regions of North, South, East, West and Central areas, and then some clusters were randomly selected proportionally to the population of each region. Of 21 girly high schools in the city (including 14 theoretic and 7 non-theoretic schools), two schools in North, Center, and West and one school in East and South were randomly selected.

The total numbers of 2984 students were studying in the first grade, 1719 in the second grade and 2266 in the third grade of theoretical branches (including branches of math, natural science and human science). The total numbers of 657 students were in the second grade and 776 students in the third grade in non-theoretical branches (including technical-vocational and profession-knowledge branches). Also, 1729 students of theoretical branches were studying in university-preparatory schools. The sample size was designated as 10 % for the given population. Hence, totally 1000 students were selected, of which298 cases were at the first grade of high school, 170 cases at the second grade of theoretical branches, 65 cases at the second grade of non-theoretical branches, 220 cases at the third grade of theoretical branches, 77 cases at the third grade of non-theoretical branches and170 students at the pre-university grade. In order to avoid of bias as a result of various educational branches, some classes at the second, third and pre-university grades in branches of Math, natural science, human science, technical-vocational, and profession-knowledge were chosen in a classified-clustering method. The class selection at the first grade was according to a clustering-random- method.

After confirming the validity of the semi organized questionnaire by ten professors of Ahvaz university of medical science, the questionnaire's reliability was determined by conducting a preliminary study on 44 high school student girls with Cronbach's alpha value of 0.81.

The questionnaire consisted of two sections, the first section contained 14 questions related

to demographic and family information, and the second part contained 30 questions in 2 domains of puberty (15 questions), and menstruation (15 questions).

After gaining the approval of the research department of the Ethics Code ETH-580 and let the city of Dezful department of education and management education schools and research explain the objectives, data gathering began. The questionnaires were presented to the students, while the participants were permitted to relinquish the study if they are not interested in it.

The amount of knowledge was calculated through mean score of correct replies in each part. Those who scored less than 50, in range of 50-75 and more than 75 were identified respectively as low, moderate, and high knowledgeable persons. Data were presented in frequency tables for quantitative data and analyzed by the Kruskal-Wallis and chi-square statistical tests for unlitative data, all in SPSS-18.

Results

The average age of participants and the average age of Students 16.05 1.08, mean age of menstruation were 12.64±1.17, respectively. 87.2% of students lived in cities. 54.4% of them were the first or second child born in the family. The most frequent job among parents was office jobs and housekeeping, respectively. Some individual and family characteristics of participants (studied persons) are shown in Table 1.

Table 1 *Demographic and family characteristics of high school adolescent*

	Level of high school	N(%)
Level of education	First grade of high school	298(29/8%)
	Second grade of high school	170(5%)
	Third grade of high school	220(22%)
	Pre-university grade	170(5%)
	Second non-theoretical grade	65(15%)
	Third theoretical grade	77(23/2%)
Residence	Urban	872(87.2%)
	Rural	128(12.8%)
Number of children	1-2	281(28.1%)
	3-5	554(55.4%)
	6 ≤	165(16.5%)
Birth order	1-2	545(54.5%)
	3-5	339(33.9%)
	6 ≤	116(11.6%)
Fathers' education	Illiterate	86(8.6%)
	Elementary	237(23.7%)
	Middle & high school	490(49%)
	Collegiate	187(18.7%)
Job of Father	No work	55(5.5%)
	The administrative	530(53%)
	Free	365(36.5%)
	Retired	50(5%)
Mothers' education	Illiterate	76(7.6%)
	Elementary	194(19.4%)
	Middle & high school	605(60.%)
	Collegiate	116(11.6%)
Job of Mothers	Housewife	874(87.4%)
	Practitioner	117(11.7%)
Age (M±SD)	Fathers	47.14 + 6.71
	Mothers	40.19 + 6.12

49 % of fathers and 60.5 % of mothers of participants had passed high school educations. There were a significant relation between fathers' job, mothers' age, and mothers' education with the amount of knowledge about puberty, confirmed by statistical test of Chi-Square. There was a significant relation between parents' education, fathers' job, mothers' age and their residence with the amount of knowledge about menstruation. The mean score of girl's knowledge about puberty and menstruation was moderate between 50-70 % (Table 2).

Table 2 *The relationship between the level of knowledge of high school adolescent girls about puberty and menstruation with demographics*

Variables	Knowledge	High N (%)		Middle N (%)		Low N (%)		p-value*	
		Puberty	Menstruation	Puberty	Menstruation	Puberty	Menstruation	Puberty	Menstruation
Age of father	≥40year	80(46.5%)	37(21.5%)	83(48.3%)	113(65.7%)	17(7.1%)	22(12.8%)	0.08	0.59
	41-50year	256(43.4%)	122(20.7%)	313(53.1%)	402(68.1%)	9(5.2%)	66(11.2%)		
	<50year	88(27%)	41(17.2%)	133(53.1%)	163(68.5%)	21(3.6%)	34(14.3%)		
Fathers' education	Illiterate	44(51.2%)	33(16.6%)	42(48.8%)	89(73.8%)	0(0%)	6(7%)	0.11	0.04
	Elementary	105(44.3%)	93(19%)	122(51.5%)	332(67.8%)	10(4.2%)	33(13.9%)		
	Middle & high school	208(42.4%)	49(20.7%)	257(52.4%)	155(65.4%)	25(5.1%)	65(13.3%)		
	Collegiate	67(35.8%)	27(31.4%)	108(57.8%)	53(61.6%)	12(6.4%)	0(0%)		
Job of father	No work	15(30%)	5(10%)	23(41/8%)	38(76%)	1(1/8%)	8(14/5%)	0.01	0.05
	Free	216(40.8%)	109(20.6%)	192(52.6%)	365(68.9%)	11(3%)	51(14)		
	The administrative	162(44.4%)	68(18.6%)	285(53.8%)	246(67.4%)	)29(5.5%)	7(14%)		
	Retired	31(56.4%)	18(32.7%)	29(58%)	29(52.7%)	6(12%)	7(14%)		
Age of mother	≥30 Year	155(38.2%)	6(18.2%)	228(56.2%)	137(61.7%)	0(0%)	(14.3%)54	0.04	0.02
	31-35year	150(45.3%)	63(28.4%)	177(52.2%)	278(68.5%)	12(5.4%)	39(11.5%)		
	36-40year	100(45.6%)	61(18%)	111(51%)	239(70.5%)	12(3.5%)	22(9.9%)		
	≥40 Year	20(60.6%)	70(17.2%)	13(39.4%)	24(72.7%)	23(5.7%)	0(0%)		
Mothers' education	Illiterate	37(31.9%)	109(18%)	72(62.1%)\	46(60.5%)	0(0%)	5(6.6%)	0.01	0.009
	Elementary	253(41.8%)	21(18.1%)	317(52.4%)	121(62.4%)	5(2.6%)	30(15.5%)		
	Middle & high school	94(48.5%)	43(22.2%)	39(51.3%)	419(69.3%)	35(5.8%)	77(12.7%)		
	Collegiate	37(48.7%)	25(32.9%)	95(49%)	87(75%)	7(6%)	8(6.9%)		
Job of mother	Housewife	377(43.1%)	177(20.3%)	455(52.1%)	588(67.3%)	42(4.8)	109(12.5%)	0.46	0.46
	Practitioner	44(37.6)	21(17.9%)	)68(58.1%)	85(72.6%)	4(4.6%)	11(9.4%)		
Residence	City	360(41.3%)	64(50%)	468(53.7%)	61(47.7%)	44(5%)	3(2.3%)	0.1	0.005
	Village	64(50%)	360(41.3%)	61(47.7%)	468(53.7%)	3(2.3%)	44(5%)		

*chi-square

Due to non-normal age of students in the group knowledge of puberty and menstruation, the Kruskal-Wallis test was applied, which was confirmed a significant correlation between these two variables (Table3).

Table3 *The relationship level of knowledge high school girls of puberty and menstruation with age them*

		Good N (%)	Average N (%)	Weak N (%)	p-value*
Puberty	Age M±SD	1.05±16.52	1.08±16.15	1.08±15.91	0.002
Menstruation	Age M±S	1.09±16.43	1.07±16.05	1.05±15.79	0.001

*Kruskal-Wallis

The knowledge score about puberty definition (including physical, psychological, physical and psychological growth) was 80.8 and about the changes of puberty phases (breast budding, pubic hair growth, beginning of menstruation and height growth) was 34.7 %. 96.9 % of them recognized puberty only as a physical growth sign, 95.5 % of them introduced menstruation as the first symptom to begin puberty. knowledge score for the functions of internal genital organs of women (uterus and ovary) was 13.4 %.46.9 % of studied girls mentioned oocytes is released from uterus that represents wrong knowledge and the lack of awareness about the function of internal genital organs.77.3 % of them defined the menstruation's blood as a dirty blood exited from genital organ and 26.2 % of them identified uterus as the origin of menstruation's blood and 87.2 % mentioned that menstruation is a symptom for the health of reproductive system.
In a survey on knowledge of girls about the sanitary principles of puberty, knowledge score was 2.8. For 90.2 % of them washing their clothes with odorless soaps, for 78.9 % the changing the underclothes, and for 85.6 % taking shower at least twice a week was necessary. In addition to, awareness score of adolescent girls about menstrual hygienic principles was low about 14.1 %. 61.7 % of them mentioned that washing the genitalia does not make problems during menstruation. The amount of knowledge about proper ways of genitals cleanness, which has a very important role in preventing gynecologic diseases, was just 57.7 %. 78.7 % necessitated the avoidance of swimming in bath and pools during the period of menstruation. 41.4 % believed that they should not exercise during menstruation. 82.5 % of them considered abdominal pain as the most significant and 18 % nausea as the least frequent symptoms of premenstrual syndrome (Table 4).
The most common sources for obtaining information about puberty were mothers (51.1

Table 4 *The knowledge of high school adolescent girls about puberty and menstrual health*

Knowledge	Knowledge Score (%)
Defined maturity	80.8%
Signs of maturity	34.7%
Genital anatomy	13.4%
Principles of nutrition during adolescence	20.6%
Puberty hygiene Principles	2.8%
Menstrual hygiene principles	14.1%
Principles of nutrition during menstruation	10.9%

%), friends and peers (39.5 %) and teachers (23 %) and about menstruation were mothers (54.2), sisters (35.3) and friends and peers (17.9). These findings revealed the important role of mothers on transferring the necessary knowledge about this stage of life.

Discussion

The results of this survey showed that the majority of the adolescent girls need to be aware about puberty and menstruation especially about hygiene principles during menstruation. These results are consistent with those of the study [14]. This may be due to the incomplete information and wrong beliefs about puberty and menstruation, or the reluctance of parents and teachers to present the required information to adolescents.

Despite the tendency among the girls to learn about puberty, still most of them do not know the full meaning of puberty and the changes accompanied by it, and their knowledge in this regard is not much [15]. Literature review indicates that the adolescents information about puberty is low inside the country and moderate to low in outside countries [8-10]; for example on a study conducted by Zare in Semnan and Damghan, only 24.6 % of girls in Semnan and 21.02 % of girls in Damghan had some information about puberty. Also a study of the educational needs of the girls for puberty health showed that they have an unpleasant feeling about puberty (menstruation), and only 23 % of them considered it helpful for physical growth and ovarian activity [16]. Abdollahi's Study in Mazandaran also showed that the scientific and physiological knowledge of the adolescent girls about menstruation had been low and also with wrong and unreal perceptions. About half of the girls (42.1 %) had no scientific explanation for menstruation phenomenon and the girls' performance had become healthier with an increase in their knowledge. On the other hand, only 5.8 % of girls were aware of full meaning of puberty (complete physical and mental growth), and menstruation phenomenon [7].

In this research, the amount of knowledge about puberty and menstruation among high school girls was at a moderate level; and there is still a need for receiving more information, so that the results of this study is consistent with a study conducted in Nigeria. In the Adeokuns study in 2011, the amount of knowledge about menstruation, anatomy and physiology of reproduction in the focus group was 49.8 and 48.1, respectively. Based on classifying the amount of knowledge into two levels of more and less than 60 %, the research community had a poor knowledge [17].

The results of researches for the source of getting the information about puberty in girls showed that the mothers are the most reliable channel for transmitting the information in the various aspects of puberty hygiene. Also the majority of mothers agreed with teaching of the hygiene aspects of puberty before it occurs. So strengthening the relationship between mother and the adolescent daughter, and also removing barriers such as shyness in expressing the materials about puberty and menstruation; or incuriosity of mothers about its implications and health consequences should be included in mothers' training programs. For that to happen, mothers should be taught the necessary trainings such as those of physical, mental, emotional and behavioral changes during puberty; and they also need to be taught its negative implications that should be prevented and its good points that should be highlighted [18].

Studies conducted in developing countries demonstrated the fact that the information on puberty and reproductive health rarely is presented by teachers and health professionals. Parents also are not often the primary source of getting information, but they are friends and the public media. This may come with dangerous consequences [19]. In this study, there was a significant relationship between the father's job, the age and the education of mother and the puberty and the place of living. In Nowruzi's study in Tehran, there was a significant statistical relationship between the amount of knowledge and the girls' economical, and social status and the urban regions; so that in northern regions with higher level of income, the amount of knowledge about menstruation was also higher and it was lower in the southern regions [20]. In the Maleki and Sedighi Sabet

study it was stated that students who their mother was more educated, had significantly more awareness of maturation [21-22]. These results are in consistence with the results of the present study.

Conclusion

The findings indicated that although nowadays girls' access to correct and necessary information have become much quicker and easier, their amount of knowledge about puberty and menstruation is still in a moderate level and they have not enough information about physical, emotional, mental and social changes during puberty. The parents' level of education, especially for mothers, can play an influential role in transmitting the necessary information to the girls; since mothers were known to be the most important source for girls to get the required information, the people-based educational approaches (education of families via health liaisons) is considered to be the best way to provide the educational needs and to change the culture.

Findings of this research according to participants said in the study that their accuracy is not ensured.

It is suggested to do the same things on the field, evaluate the effect the media and advanced techniques (satellite, internet, computers and mobile) on sexual knowledge of adolescent girls, survey of Knowledge religious education in health behaviors of adolescent girls, evaluate the time and teaching methods appropriate reproductive health education from the perspective of adolescent girls.

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Contributions

Study design: PA, MJN
Data collection and analysis: SM, ZHM , HT
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Conflict of interest

"The authors declare that they have no competing interests."

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