

# Evaluating puberty health program effect on knowledge increase among female intermediate and high school students in Birjand, Iran

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## ABSTRACT

**Background:** Puberty is one of the most critical periods in a female adolescents' life. This intervening study aimed to evaluate the effect of educational program for puberty health on improving intermediate and high school female students' knowledge in Birjand, Iran. **Materials and Methods:** In this quasi-experimental study, 325 female intermediate and high school students were selected through randomized cluster sampling during several stages. Then, researcher-made questionnaire including 20 questions, each having one point regarding puberty health, was distributed. After completion of the questionnaires were gathered. Following this, under a systemic educational plan all intermediate and high school selected students were given the same instruction by trained instructors. Instruction time for each meeting was estimated 1.5 hours. One month after the educational program and handing out the pamphlets in schools, the previous questionnaires were again distributed among the students to fill out. At the end, 302 students who had filled out the questionnaires before and after intervention were studied. **Results:** Out of 302 students, 151 were intermediate and 151 high school students. Knowledge level among intermediate students was  $5.03 \pm 3.7$  before intervention and was  $10.8 \pm 4.8$  after intervention. Among high school students, the scores were  $4.1 \pm 2.3$  and  $8.7 \pm 3.8$ , respectively. There was a significant difference between pre and post intervention stages in both groups ( $P < 0.001$ ). Furthermore, mean knowledge grade in all the students increased from  $4.6 \pm 3.1$  before intervention to  $9.7 \pm 4.4$  after intervention ( $P < 0.001$ ). **Conclusion:** Performing educational programs during puberty has a crucial role in young girls' knowledge increase. Since young girls often do not share their problems with their parents and their peers during the period, instructional classes in schools provide a good opportunity for them to present their problems and finding solutions.

**Key words:** Evaluation, female students, health, instruction program, knowledge, puberty

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## INTRODUCTION

According to the statute of the World Health Organization, health is considered as a personal and social value and in view of different nations, it has been considered as the most important and obvious rights and human needs. In line with achieving health, all the countries pay attention to all different groups of society. Among these groups, young girls are of special importance; because today's young girls are tomorrow's mothers and accordingly they would be able to play a key role in health status of themselves and community around.<sup>[1,2]</sup>

Adolescence is an important period of life. The period in which

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psychological, social and physical puberty happen in. Several events such as puberty, marriage, pregnancy, etc., occur in this era. The major change is that this period which is so important and is considered as the turning point of adolescents, is puberty.<sup>[3,4]</sup> In fact, puberty is one of the critical stage of life which its infrastructure is through foundation of adulthood and perhaps many psychological problems, infectious diseases and unsuccessful marriages, early and risky pregnancies, mother and child injuries and deaths and finally serious physical and psychological problems are rooted from this period; therefore, this period of life is considered as an underlying period for different stages of life.<sup>[5,6]</sup> This period of life is highly important in association with health; because many health habits of individual form in this stage of life which has an important influence on health behaviors in adulthood.<sup>[7]</sup>

Although puberty era, problems and quality of passing this era is important for both sexes, noticing to health of girls in puberty is of higher importance; because young girls are in special conditions in addition with passing from the critical transition of puberty, because of their gender (being a woman) and consequently accepting responsibility and role of motherhood.<sup>[8]</sup>

In Iran (According to the census in 1996), adolescents (10-19 years old) were 16 million people; in other words they constitute 27% of total population and out of this number, 7,993,875 people (45%) were girls. Given to allocation of high percentage of young girls' population, the importance of health education is quite sensible in their health programs.<sup>[3]</sup>

Addressing to health of this group of society is helpful not only for them, but also for their families, society and future generation as well, and addressing their problems in fact is investment in national development. Unfortunately in practice female health programs cover more on peak of reproductive age and childbirth and do not pay necessary and required attention to the health needs of young girls and they have been forgotten like a missing ring; while young girl would have many physical, psychological and social problems in her growth and development path particularly during puberty till marriage and so forth. Nevertheless, in some societies, girls still are sacrificed due to lots of false traditions prevailing in society; so that health, nutrition and education for girls is given less value than for boys; however, girls have a special biological privilege since their birth that makes them more resistant to malnutrition and infection than boys, but due to problem and failure to meet health needs, this biological advantage gradually disappears. Hence, one of the goals of UNICEF is to support girls including prioritizing their health and nutrition needs during adolescents.<sup>[9]</sup>

Complications and problems of puberty era are easily preventable and health education is the most important and basic step in prevention and removing problems of this stage. The education should be implemented in order for informing the context of physical, psychological and social

problems<sup>[10,11]</sup> as well as in three pivots of family, school and public education. Family and school are two institutions have the highest influence on formation of health behaviors in adolescents and in fact behaviors of adolescents is a reflection of these two institutions' performance and both school and family should participate in educating puberty issues to youths. Family as the first social base has the most important role in education and transferring health behaviors to family members. Although each of family members have their own role in educating puberty issues for adolescents, position of mother is more obvious meanwhile and most of young girls learn their health behaviors from their mothers. Due to higher proximity and connection of adolescent girls with mother, they would be higher under her influence. Studies have shown that girls learn about physical changes and puberty from the family particularly from mothers.<sup>[11,12]</sup>

However, schools also have major role in achieving some behaviors related to education of puberty issues and schools are in charge of adequate educations in association with girls' puberty after the family. Studies have shown that most of parents, educators and adolescents are not aware of health issue during puberty; whereas youths confront with many questions due to physical and psychological changes in this period and naturally they have many physical needs must be answered to.

Adolescents have the right to obtain information about puberty changes and know what has happened. Certainly, it is therefore the duty of parents and teachers to provide reasonable and logical responses. Due to shame or lack of knowledge most of parents cannot talk about puberty and sexual issues with their children or help her; therefore, the present study aimed to increase knowledge level of female guidance and high school students in Birjand City about puberty health and reviewing the effect of education on promoting knowledge level and health of female students.

## MATERIALS AND METHODS

This was an interventional (per and postintervention) study on 325 female students at guidance and high school grades in Birjand City who were selected through randomized multi-stage sampling method. The schools of Birjand geographically were divided into four regions and in each region two high schools and two guidance schools were randomly selected and in each school one grade was selected among the educational grades and they were enrolled the study by randomized systematic sampling which related to sample size.

Data collection was conducted through a researcher-made questionnaire designed based on objectives of educational course and included 20 one-score multi-choice questions for assessment of knowledge; the validity of the questionnaire was approved by a number of faculty members.

After sample selection, the questionnaires were distributed in each school in an appropriate place and then were

collected after completion. Thereafter, by a documented educational program, all the students in guidance and high schools were taught with identical educational content by trained instructors. The time of training in each class was designed in two 45-minute sessions and simultaneous with holding educational classes, educational pamphlets about the required subject were also distributed among the students.

A month after the intervention in each school, the questionnaires of the first stage were distributed among the students selected as the study samples and then were collected after completion in an appropriate place. Those who did not complete the second stage of the questionnaire for any reason were excluded from the study.

Finally 302 students completed the pre and postintervention questionnaires and were studied. The data were analyzed through Software SPSS and paired *t*-test at significant level ( $\alpha = 0.05$ ).

## RESULTS

In this study, 302 female students at guidance school ( $n = 151$ ) and high school ( $n = 151$ ) were studied. Mean age of the students at guidance school grade was  $12.9 \pm 1.1$  years and in high school grade was  $16.3 \pm 1.3$  years. Statistically there was a significant difference in mean score of knowledge of guidance and high school students before and after the intervention [Table 1].

In addition, the subjects showed a significant difference in mean score of knowledge before and after the intervention [Table 2]. Mean score of knowledge before and after the intervention in guidance students increased 5.77 score and in high school students increased 4.6 scores and in total students increased 5.1 scores and these differences were statistically significant.

## DISCUSSION

Mean score of knowledge in students regarding puberty health was 4.7 before implementation of educational program and it increased to 9.7 after the intervention. In female students at guidance school, knowledge score increased from

5.03 to 10.8 and in high school students also increased from 4.1 to 8.7. The estimated mean difference before and after the education statistically showed a significant difference which indicates desirable increase in knowledge of students about health of puberty era.

In the study of Zabihi, education also had a positive impact in knowledge rate of students regarding puberty health and there was a significant relationship between knowledge of students in puberty health before and after the education ( $P < 0.001$ ).<sup>[13]</sup>

Other similar studies also indicated the impact of education on increased level of knowledge regarding puberty health.<sup>[14-16]</sup> In three recent studies there was also reported a significant difference in knowledge rate of students before and after the educational intervention about health of puberty period.

Religious duty time is one of the most sweat moments of every teenage girl. Simultaneous with Religious duty time, puberty is formed in girls. In this period, due to physical, psychological and social changes, the knowledge level of adolescents should be promoted so that no health risk threatens them. Knowledge and awareness of girls from observing health tips during puberty can have an effective role in their performance and can decrease many subsequent problems for them. Due to shame and modesty, young girls usually do not speak about problems of puberty era with their mothers; education is the most effective goal for changing behavior and young girls and boys need knowledge and life skills to make a correct decision and positive behaviors of life.<sup>[17,18]</sup>

Studies have shown that puberty education has a significant influence on correct way girls have with changes during puberty and modification of health behaviors.<sup>[19]</sup> According to the results of the present study, in order to promote knowledge level of female students toward puberty issues and modification of health behaviors, it is necessary to transfer correct information to them through counseling and providing educational books and pamphlets. Accordingly, in order to promote health of youths and adolescents, Eastern Mediterranean Health Organization announced that continuous health education to adolescents through schools

**Table 1: Comparing mean score of knowledge before and after the intervention in guidance and high school students**

Educational grade	Knowledge	Frequency	Mean $\pm$ SD	Statistical paired 't' test
Guidance	Preintervention	151	5.03 $\pm$ 3.7	$t = 12.1$ , $df = 150$ , $P < 0.001^*$
	Postintervention	151	10.8 $\pm$ 4.8	
High school	Preintervention	151	4.1 $\pm$ 2.3	$t = 12.9$ , $df = 150$ , $P < 0.001^*$
	Postintervention	151	8.7 $\pm$ 3.8	

\* $\alpha = 0.05$  considered as significant level

**Table 2: Comparing mean score of knowledge before and after the educational intervention in the study subjects**

Knowledge	Frequency	Mean	SD	Results of Paired t test
Preintervention	302	4.6	3.1	$t = 17.4$ , $df = 150$ , $P < 0.001^*$
Postintervention	302	9.7	4.4	

\* $\alpha = 0.05$  considered as significant level

and health services of schools for preventive health care in the first and second levels should be done for all the students as well as for maternal and child health.<sup>[20]</sup>

## CONCLUSIONS

Given to the role of health education in promoting knowledge level which finally can change behavior and improve performance, it is recommended to insert educational program in agenda of health promotion programs based on needs of different groups particularly girls and mothers.

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