

# An examination of the effect of health promotion plan in high school students' on knowledge and performance on peers suffering from asthma in high schools of district 3 in Esfahan, 2010

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## ABSTRACT

**Background:** Asthma is the most prevalent disease during childhood, known as the most important reason for children's disability adolescences truancies, thanks to their hospitalization and as a result intensification of disease symptom. **Material and methods:** The present study is quasi-experimental kind, implemented with two groups. Sampling method was straightforward. 80 student's second-grade high school students constitute participants. Both groups were homogenized considering age, gender, education, and parent's vocation. First of all, a letter agreement was received from students. Then, the knowledge and accomplishment of students were measured by means of relevant questionnaire and checklist in advance of educational intervention. In the next step, during 4 sessions, educational content specified beforehand was presented to students via interview, lecture, group discussion, and display methods. The knowledge and accomplishment of both groups' students was measured through questionnaire and checklist. Finally, the data was analyzed by SPSS 16 and statistical test of t-paired, independent-t, man-Whitney, and ANOVA. **Results:** The finding demonstrated that group's student accomplishment registered  $91.8 \pm 1.3$  while being  $2.2 \pm 0.6$  before holding session. In addition, their knowledge increased significantly, registering  $99.6 \pm 1.2$  while it had measured as  $1.3 \pm 0.3$  before sessions. The results of paired t-test indicated that the average of difference between knowledge and accomplishment grades of two groups was significant ( $P < 0.05$ ). **Conclusions:** Regarding the finding of the present study and the fact that asthma is on the rise resulting in an increase in truancies as well as stressing the efficacy of training peers suffering from the disease, the implementation of the curriculum could be necessary.

**Key words:** Asthma, health promotion, knowledge, performance

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DOI:  
10.4103/2277-9531.100163

## INTRODUCTION

Life of the human being is intertwined with many changes and transformation from the clotting of the semen to the death and is divided into different stages according to specific criteria. One of the stages of the human life is adolescence age.<sup>[1]</sup> In this age, adolescents expand their eligibility bases, and gradually the responsibility of health care would be relegated to them by the parents. Furthermore, the peers' individuals have a more important role for the adolescents compared with the childhood period. The peers group provides a strong support for the adolescent and creates a sense of belongingness and power

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This article may be cited as:  
Hemate Z, Ghazavi Z, Hasanpor M, Iranpor R, Alidosti M. An examination of the effect of health promotion plan in high school students' on knowledge and performance on peers suffering from asthma in high schools of district 3 in Esfahan, 2010. *J Edu Health Promot* 2012;1:33.

in them. Therefore, it has an intense effect on the behavior and performance of the adolescents. The occurrence of an acute disease in this period leads to the creation of disturbance in the natural perfection process in the adolescence period. Among these acute diseases, asthma is worth mentioning. Asthma is the most common disease in childhood, which is considered as the forerunner of acute diseases and simply can cause disability among the children.<sup>[2]</sup> This disease is an important reason for the children's absence from the school due to admission into the hospitals.<sup>[3]</sup> The prevalence of children's asthma all over the world is increasing due to numerous stressful factors, despite noticeable progressions in the field of disease controlling and access to different medications for its treatment.<sup>[4]</sup> It can be envisaged as an epidemic disease, which has major effects on the health and the economical conditions of the society. The prevalence of this disease during the last few decades in the United States has been 16% among the children under 5 years old and nearly 74% among the adults.<sup>[5]</sup> The percentage of the students with asthma in Iran has been estimated as 10%.<sup>[6]</sup> In recent years, due to various life problems in Iran and the increased stress rate, the disease of asthma has been increased in the country like in most other societies. Considering the high prevalence rate of this disease, training is one of the important methods for promoting the hygiene and health of the students through conducting different training projects by relying on their participation in different hygienic activities.<sup>[7]</sup> Moreover, caring through holding the training programs for the peer adolescents with acute diseases is one of the effective measures in order to train, empower, and cultivate the willpower in adolescents and also can help to change the risk-taking behaviors and decrease the side effects.<sup>[8]</sup> Recent conducted studies have shown the effectiveness of training peers in decreasing the side effects of the acute diseases e.g. Choudhury *et al.* in 2009 investigated the effect of training the peers in preventing side effects of the cardiovascular diseases resulting from type II diabetes.<sup>[9]</sup> In addition, another study, which was conducted by Mahat *et al.* in 2008 in New Jersey, titles the effect of training peer adolescents who are susceptible to risk-taking sexual behaviors and preventing AIDS; the findings indicated an obvious increase in decreasing these types of behaviors among the adolescents.<sup>[8]</sup> Since it is the most common reason for the frequent hospitalizations and school absence due to lack of information about the intensity of the disease and due to treatment among the asthmatic students and the peers of the adolescents with this disease can assist them better at the time of asthma attack because of having the possibility for an easy availability and a better trainability from the peer group and consequently decrease the incidence of side effects; therefore, this study aimed to assess the effect of conducting training programs for high school students on the performance of the peers with asthma.

## SUBJECTS AND METHODS

This study was of a quase-experimental kind, conducted before and after intervention. The instruments for gathering information the questionnaire contain 5 demographic items, 14 knowledge measurement items, and a performance

measurement checklist with 14 questions. Having obtained necessary letters of permission from Isfahan education organization, district 3, those high schools in which students with asthma were being taught were selected. Then, two female high schools, one for test group and the other for control group were chosen after convincing high school principals and achieving letters of consent from those students willing to participate; 40 second-grade high school students were easily included in the study in each high school. The knowledge questionnaire and performance checklist developed by the researcher were presented to some professors of and specialists on asthma and allergy, and statistics advisors to decide their validity and the necessary amendments were made after collecting ideas and suggestions. In order to calculate reliability, the researcher, during a pilot study, presented the knowledge measurement to 10 qualified people, who were not going to be included by the study to fill them out. Furthermore, the researcher, through an oral interview, tried to completed performance checklist and measured knowledge questionnaires and performance checklists cronbach as 87% and 89%, respectively. Having homogenized the two groups demographically, the pre-test was conducted, and knowledge questionnaire was answered by the two groups measure performance, and through simulating an asthma attack, the researcher completed related checklist by observing activate of peers during attack. Having examined pre-test results and determined the matters required for education, the training intervention for test group was conducted by the researcher through lecturing, group discussion, collective methods, and activating accompanied by questioning. The members of test group were firstly divided into two equal subgroups, and training program (four 60-minute training sessions held at 9-10 and 10-11 am) was performed for both subgroups while high school personnel were acting as coordinators. During first session, different types of illness and its clinical symptoms were presented via lecture and questioning after acquainting students with asthma definition. During second session, the content of the first session was firstly gone through, and some questions about first session's ideas were asked and students replied while discussing in 5-member circle. Then, content of the second session, including asthma attack reasons and its preventive methods, were offended by giving lecture and questioning. As the third session started, questioning and group discussion were adopted, and it was followed by presenting this session's content including athletic asthma and its preventing methods. Training of required activities and assistance in case of attack was presented to students providing individual students with MDI devices simultaneously, showing the pictures through PowerPoint, and imitating by the researcher herself. Furthermore, the indirect training was offered during fourth session and through presenting researcher-developed booklets. After a one-month break following the last training session, knowledge questionnaires and performance checklists were again filled out by both the groups, and the data was analyzed by SPSS 16 software. The t-paired test, independent-t test, mann-whitney test, and dependent-t test were utilized for comparing examined variables before and one month after

intervention in both test subgroups, the scores average between the two subgroups at one point in time educational level and people's age average in both subgroups, respectively. Statistically *P* was held significant at  $< 0.05$ .

### Findings

The average of an age was 16 in both groups examined in this study, and there was no difference between two groups. 82.5% of fathers of students in both groups had under diploma education, 5% of them in test group and 5-7% of them in control group enjoyed academic education, and the two groups were not statistically different ( $P = 0.95$ ). Furthermore, 87.5% of test group's mothers and 75% of control group's mothers had under diploma studies; besides 0% of test groups mothers and 5% of control groups mothers had academic studies. Therefore, there was no significant difference between the two groups ( $P = 0.13$ ). The occupation of a large portion of fathers and mothers of the two group's members was Self-employed and housewife, respectively – square test showed no significant difference regarding this ( $P = 0.12$ ). The comparison of peoples knowledge and performance scores average, before and one month after training for both groups, is presented in the following table, showing there is no significant difference between the scores before and one month after training in control group. However, the difference is significant in test group ( $P < 0.001$ ). As observed in [Table 1], the average of knowledge and performance scores of the two groups have no significant difference, but the given difference will grow significant after training ( $P < 0.001$ ).

## DISCUSSION

The results indicated that the amount of knowledge of peers of those students suffering from asthma would grow significantly after performing training intervention. The same results have been obtained in the case of performance. The results of a study by pit erg et al., aiming at examining the effect of training of peers of students with asthma, indicated that the mean of student's knowledge scores of test group increased significantly one month after training intervention. However, there was no tangible variation in control group as a result.<sup>[10]</sup> The peers of students with asthma could assist them during attacks regarding study's results, helping the patient and family's fear and stress device, and consequently prevent from creating difficulties facing learning process and

incurring high expenses for treatment. In a study by Smith et al., on training the peers of students with asthma, the level of knowledge and attitude of students in test group increased after training intervention compared to control group. In addition, the attitude level of students in test group showed a significant difference compared to before intervention, confirming the present study's findings and showing its ability to increase students knowledge on asthma.<sup>[11]</sup> Furthermore, ganga et al.'s study on training risky behaviors to adolescents peers predisposed to AIDS has reported similar findings, indicating that the training peers of students with chronic illnesses could consequently preventing from heightening their conditions.<sup>[8]</sup> The results of piggy et al., study conducted in the U.S., have reported similar findings in case of diabetes.<sup>[12]</sup> Choudhury et al. have also reported that training of the peers of those students suffering from diabetes helped their athletic performance improve.<sup>[9]</sup> In another study by Nazar et al., entitled an examination of training effect on student's nutritional behaviors, it was found that the amount of knowledge and nutritional performance of students had improved significantly after training.<sup>[13]</sup> In a study by Frail et al., on performance of students with obesity, a significant difference was found in students behaviors' and selection level of foods and meals after performing training program compared to before it.<sup>[14]</sup> Shoals et al., in a study aimed at examining the effect of training peers of adolescents, predisposed to sexual risky behaviors in Zambia, found that the knowledge of test group students on using condom in prevention AIDS increased one month after training. Moreover, test group students attitude on using preventive instruments in order to prevent AIDS increased while no difference was observed in control group.<sup>[15]</sup>

Kirby et al., in their systematic examination, have reported in effectiveness of schools curricula and peers training on prevention from HIV.<sup>[16]</sup> Furthermore, Speizer et al., in a study on assessment of peers training effect on adolescents regarding AIDS preventing behaviors and sexual illness in Cameroon, found that there is a significant correlation between training by peers and knowledge enhancement in the case of new control Aptiva methods and sexual illness symptoms.<sup>[17]</sup> Campbell et al. have also reported the positive effect of adolescent peers training on decreasing smoking complications.<sup>[18]</sup> The results of Mohammadzadeh et al. showed that the mean knowledge score of teachers was  $(12 \pm 2.3)$ . This means that the mean knowledge score was intermediate.<sup>[19]</sup> Because of adolescents' tendency toward peers and creating popularity in group, its consequent social support produced by this group, training student, in particular by peers of students with chronic illnesses, could prevent from stress and depression among affected students and be some strategy to enhance their health.

### Limitation of the Study

Since the trainings were offered during student's classes, there was some interruption between class hours and training time; the researcher could decrease the limitation greatly in collaboration with high school principle.

**Table 1: The comparison of mean of examined variables scores of test and group before and after training**

P	Test	Control	Test	Variable
	SD ± mean	SD ± mean		
$P = 0/14$	3/0 ± 3/1	1/25 ± 2/5	Before training	Knowledge
$0/001 < P$	1/2 ± 99/6	4/2 ± 35/1	After training	
$P = 0/28$	0/8 ± 2/2	0 ± 0	Before training	Performance
$0/001 < P$	1/3 ± 91/8	0 ± 0	After training	

## CONCLUSION

Since training of peers of students with asthma has been effective, helping the knowledge increase and performance enhance, the performance of this kind of program is suggested in the case of other chronic illness.

## ACKNOWLEDGEMENT

The authors are thankful to all adolescence that collaborated in this study. In addition, we acknowledge the Nursing and Midwifery Faculty of Isfahan University of Medical Sciences for its financial support of the study.

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**Source of Support:** Nursing and Midwifery Faculty of Isfahan University of Medical Sciences, **Conflict of Interest:** None declared