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Original Article

Assessing the effect of high school students' training program on peers performance suffering from asthma

Zohreh Ghazavi, Zeinab Hemmati**, Marzieh Hasanpour***, Ramin Iranpour*****

Abstract

BACKGROUND: Asthma is the most common disease in childhood which is considered as the forerunner of the acute diseases and simply can cause disability among the children. Since childhood and adolescence are the most important periods of growth and perfection and incidence of asthma can bring about distortion in this process, the present study done aimed to assess the effect of conducting high school training program on peers' performance with asthma.

METHODS: This was a quasi-experimental study in which the performance rate of the students at the time of artificial attack of asthma was directly observed, assessed and compared through demographic data questionnaire and performance assessment check list. Eighty individuals from the second grade of high school students in 2010 in Isfahan City were randomly selected to participate in the present study, among which, 40 individuals were entered in the test group and 40 of them also were placed in the control group. After conducting the training program for the test group, which had been designed both by direct method (in person and face to face by asking and answering and group discussion) and by indirect method (using pamphlet and other educational materials), the level of the training effectiveness was assessed on the students' performance.

RESULTS: The findings of the present study indicated that the performance of students at the test group increased from 2.2 (0.6) to 91.8 (1.3) which emphasized that the training program for the young adolescent peers had a positive effect on promoting their health.

CONCLUSIONS: Considering the results of the present study and regarding to the importance and role of students as the future makers of the country, and also the cost-effectiveness of the training programs and the positive effect of peers on increasing the level of health among the students with asthma and consequently decreasing the school absence, it obviously seems necessary to generalize and expand these training programs.

KEY WORDS: Performance, asthma, training program, peers.

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Life of the human being is intertwined with many changes and transformations 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.[1] 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 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,

* MSc, Instructor, Department of Pediatric Nursing, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.
** MSc Student, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.
*** PhD, Nursing and Midwifery Care Research Center, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.
**** MD, Assistant Professor, Department of Pediatrics, School of Medicine, Saint Alzahra Hospital, Isfahan, Iran.
Correspondence to: Zeinab Hemmati, MSc.
E-mail: z_hemate@nm.mui.ac.ir
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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.[2] This disease is an important reason for the children's absence from the school due to admission into the hospitals.[3] 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.[4] 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.[5] The percentage of the students with asthma in Iran has been estimated as 5 to 15 percent.[6]

In recent years, due to various life problems in Iran and the increase stress rate, the disease of asthma has been increased in the country like 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.[7] 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 will power in adolescents and also can help to change the risk-taking behaviors and decrease the side effects.[8] 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.[9] In addition, another study which by Mahat, et al in 2008 in New Jersey titles as 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.[8]

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.

Methods

This was a quasi-experimental study with pretest-posttest design. Data collection tool was a questionnaire which consisted of 5 questions about demographic data and a performance assessment checklist which had 14 questions. Sampling method for selecting the schools was done randomly at the first stage. For the second stage, 80 female high school students who were studying at the second grade in the district 3 of Education Department were selected after referring to their schools by simple sampling method and accordingly included into the study so that 40 study subjects were entered into the test group and other 40 study subjects were placed in the control group.

After obtaining the necessary permissions from the Education Department of Isfahan City and the authorities of the schools, the consent forms were filled in by both groups and the data, regarding the homogeneity of the demographic data in both groups, were collected and then analyzed by help of a statistics consultant and finally after assuring the homogeneity of the both groups, the pre-test was held for the students so that by making an artificial environment of asthma attack and implementing some measures from the peers atthe time of attack, the checklist was completed.

Thereafter, the training intervention was carried out for the students in the test group by using methods as lectures, asking and answering and using spray at the time of attack and implementing the necessary measures during four sessions 90 minutes. The control group received no training intervention though. One month after the end of the last training session in the test group, by creating an artificial environment of asthma attack and the help of each of the students at the time of the attack and also direct observation, the performance assessment checklist was completed by the researcher in the two groups of test and control.

Following the compilation of the data from the pre-test and post-test, the data were analyzed using Software SPSS. The used statistical tests included the Pearson correlation coefficient, ANOVA, chi-square, Mann-Whitney, Fisher, independent t-test and paired t-test. In order to obtain validity and reliability of the checklist, content validity method was used. In other words, the prepared checklist was given to some of the professors and experts in the field of Children's Asthma and Allergy and Statistics and after gathering their viewpoints and suggestions, the necessary reforms were modified and in order to obtain the reliability, the prepared checklist was given to 10 qualified individuals through a pilot study and was completed through oral questions. Then, the Cronbach's alpha of the checklist was estimated as 89% using Software SPSS The ranging score of the checklist was done thus score 0 was dedicated to the answer "does not do", score 1 to "does it by the friends' help" answer and score 2 to "completely does it". Through creating an artificial environment of the asthma attack by the classmates of the student with asthma, the checklist was completed for each individual by the researcher while observing their performance during the attack.

Results

Eighty students at the second grade of high school participated in the present study, which the students with asthma attended into the training program classes; 40 study subjects entered the test group and 40 study subjects also entered into the control group. There was no significant difference between the two groups in terms of demographic data including the age of the high school students, occupation and educational level of their parents. The educational level of the most fathers in the test and control groups was under high school graduates (82.5%). In addition, the educational level of the mothers in the test group was 87.5 percent under high school graduates while in the control group it was equal to 75 percent. Considering the occupation of the fathers, 82.5 percent in the test group and 85 percent in the control group were self-employed and 98 percent of the mothers in the test group and 95 percent in the control group were housewives.

Regarding the first objective of the study, the performance of students in the control and test groups statistically did not have any significant difference before the conducting of the research so that the mean and standard deviation in the test group before the intervention was 2.2 (0.8) and 0 (0) in the control group.

The mean of high school students' performance in the test group before conducting the intervention with mean and standard deviation of 2.2 (0.8) compared to after the training program intervention increased to 91.8 (1.3). Moreover, paired t-test showed a significant difference ($p = 0.00$).

Considering the performance in the control group before the educational intervention with mean (SD) of 0 (0), it did not have any significant difference with the post training intervention with mean (SD) of 0 (0). Paired t-test showed no significant difference ($p = 0.05$).

Considering the performance score change of high school students in the test and control groups after the training, the mean of high school students' performance score change was 91.1 (2.8) in the test group and 0 (0) in the control group. The independent t-test with $p = 0.05$ showed a significant difference between the score changes of the performance in the test and control groups after the educational intervention.

Discussion

Considering the first objective of the study (comparing the mean of performance score of high school students in the test and control groups before the intervention), the mean score of performance in both groups did not have any significant difference before the intervention.

Considering the second objective of the study (comparing the mean of high school students' performance score in the test and control groups after the intervention), the mean of students' performance score increased in the test group in comparison with the control group.

In a study by Choudhury et al in 2009 for assessing the effect of training the peers of adolescents suffering from type II diabetes in Bangladesh, the results showed that the level of exercising activity among the adolescents in the test group with diabetes indicated a significant difference after the intervention ($p = 0.02$).[9]

Considering the third objective of the study (comparing the mean of performance score of high school students in the test group before and after the intervention), the results showed that the mean of performance score in the test group increased before the intervention compared with the after the intervention.

In a study by Stock et al in 2007 for assessing the effect of training the peers of students with obesity in Canada, the mean of performance score of students suffering from obesity showed a significant difference before the intervention which increased from 4.6 (1.2) to 5.7 (0.2) {paired t-test ($p = 0.00$)}. In addition, paired t-test showed the mean weight of the students with obesity, as significant regarding to the increase in their level of activity in the test group compared with before the intervention ($p < 0.01$).[10]

Considering the forth objective of the study (comparing the mean of performance score of high school students in the control group before and after the intervention), the results showed that the mean of performance score in the control group did not show any significant difference before and after the intervention.

Considering the fifth objective of the study (comparing the mean score change of high school students' performance in the control and test groups after the intervention), the mean score change of the performance had a significant difference in the control and test groups after the intervention.

In a study by Fereiel et al in 1993 about assessing the effect of training program on the performance of the students with obesity, the results showed that there was a significant difference between the students' behavior and the selection level of foods and meals after the intervention compared with before the intervention.[11]

Conclusion

Considering the results of the present study and regarding the importance and significant role of students as the future makers of the country and the cost-effectiveness of hygiene training activities compared with all the activities in this field, it seems quite necessity to generalize this type of training programs and expand them.

The authors declare no conflict of interest in this study.

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