

Effect of Orem's Self-Care Model on Self-Esteem of Adolescents with Asthma Referred to an Asthma and Allergy Clinic in Isfahan

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Introduction: Acquisition of chronic diseases such as asthma leads to psychological, mental and physical complications in adolescents, and hence their self-esteem may be compromised. Therefore, the present study was conducted to assess the effect of Orem's self-care model on self-esteem of adolescents with asthma.

Materials and Methods: This semi-experimental study enrolled 64 asthmatic adolescents referred to Shariati Hospital, Isfahan. Subjects were assigned to two groups of control and intervention consecutively. Then, the self-care training program was conducted according to Orem's self-care model in eight two-hour sessions based on self-care needs, and self-esteem was measured in the two groups prior to and two months after the last training session. The data were collected by a questionnaire of demographic characteristics and the Coopersmith Self-Esteem Inventories (CSEI) and analyzed by SPSS version 20.

Results: Independent t-test showed a significant difference in the mean score of self-esteem between the intervention and control groups after the training ($P < 0.05$), but the difference was not statistically significant prior to the intervention. Paired t-test showed a significant difference in the mean score of self-esteem before and after the training in the intervention group ($P < 0.01$), but this difference was not statistically significant in the control group ($P > 0.05$).

Conclusion: Regarding the effect of Orem's self-care model on self-esteem of adolescents with asthma, we recommend the use of this model as a care intervention in healthcare centers to promote adolescents' health.

Key words: Models, Nursing; Self Concept, Adolescent

INTRODUCTION

Asthma is one of the most prevalent diseases in children and adolescents (1). The prevalence of this disease is 5-10% in children and adolescents worldwide. In Iran, the prevalence of asthma has reported to be 2.7-35.4% in children (2, 3). Several studies have shown that this disease is more challenging in adolescents, causing anxiety problems, depression and decreased self-esteem (3).

Ferreira de Sousa et al, in their study on self-esteem development throughout ageing demonstrated that the self-esteem was the highest in childhood and decreased in

adolescence. Therefore, adolescence is thought to be an important period to maintain self-esteem (4). Poor adherence to treatment in adolescence highlights the significance of asthma in this high-risk age group. Although the management of asthma in adolescents has advanced greatly, its prevalence, mortality rate, missed school days, poor physical performance, repeated emergency room visits and hospitalizations are increasing, indicative of inadequate control of asthma (5).

In a study by Zarei et al, the parents were found to be less able to control asthma in adolescents and expected the

adolescents to take responsibility with regard to their asthma control. However, several studies have demonstrated the adolescents' inability to adhere to treatment. On the other hand, adolescents are thought to be able to take care of themselves physically but peers' pressure, tendency toward independence and high-risk behaviors can prevent self-care practices (2). For chronic diseases, self-care includes examination and control of symptoms, adherence to diet, maintenance of a healthy lifestyle and management of disease contribution to daily activities, emotions and social relationships (6). Significant tenet of self-care is patient's involvement and assumption of self-care responsibility. Nurses could have a great contribution to promoting self-care capability in patients thanks to playing roles in training, coaching and guidance (7). The self-care capability was introduced by Orem as a constituent of nursing theory, including individual ability of self-care (8). Manchana et al. demonstrated that training interventions as an effective approach could lead to change in behaviour and enhance self-care and self-control of disease conditions (5). Moreover, Altay et al. indicated that self-care ability increased significantly in adolescents with asthma after Orem's self-care model-based training (1).

Therefore, because of inadequate examination of Orem's self-care model in asthmatic adolescents, high rate of asthma incidence in Iran, and sociocultural differences between Iran and other countries, the authors sought to assess the effect of Orem's self-care model on self-esteem in adolescents with asthma referring to an asthma and allergy clinic in Isfahan.

MATERIALS AND METHODS

This semi-experimental study was conducted on 64 participants assigned to two groups of 32 each. Ethical approval was obtained from Research and Technology Deputy of Isfahan University of Medical Sciences and letter of consent was signed by the parents of patients. The sampling was done among patients referring to Shariati Hospital, Isfahan. For sampling, the first referring individual who met the inclusion criteria was assigned to

the intervention group and the second to control. This process was continued until the desired number of participants was reached in the two groups.

The patients were included if they were suffering from asthma for six months (by definition, chronic diseases take three months to intervene in daily activities and influence patient's quality of life)(9), had no other chronic disease, were able to answer questions and participate in training classes, were mentally healthy and had no mental retardation, had no history of taking drugs with mental effects (with reference to medical file and the physician), full consciousness (no emergency situation during the study) and no stressful events such as the death of a close relative throughout the study in the two groups of the study. The exclusion criteria consisted of failure to attend the two consecutive sessions and/or one-fourth of all the sessions and leaving the study.

In this study, Orem's model-based training and self-esteem were determined as independent and dependent variable, respectively, and the adolescents' age and gender, the duration of the disease, and the parents' education level and occupation as underlying variables. After explaining the research purposes and obtaining written consent from all the participants, the researcher filled out pretest questionnaires.

Prior to the intervention, based on the comments of pulmonologists and faculty members of pediatric nursing, self-care needs in five domains (respiratory status, mood functioning, social functioning, physical activity and general understanding of health) were taught in group and individually to the patients in the intervention group after the questionnaires were filled out by the patients within eight two-hour sessions via lecturing, brainstorming and using teaching tools such as PowerPoint and videos at Shariati Hospital's clinical skills training workshop by the researcher with assistance of a pulmonologist. The teaching content consisted of asthma and methods to control its symptoms, types of effective breathing movements (diaphragmatic and lip-bud breathing), appropriate use of spray, and methods to decrease stress

and anxiety as in the Orem's self-care model (10). Also, the researcher's phone number was given to the patients for further guidance and support during the two-month follow-up (11). Therefore, the patients were allowed to call the researcher if they had any questions. Finally, two months after the intervention, the patients in both groups were asked to fill out the questionnaire of self-esteem (post-test). It is noteworthy that the researcher trained the patients in both groups similarly after filling out the questionnaires to follow the ethics of research. The data collection tool consisted of two sections: demographic characteristics and the CSEI for children.

This inventory is a famous instrument to measure self-esteem and has been already used in many studies. It consists of 58 questions 26 of which are concerned with general, social, familial, and professional domains. In addition, eight questions addressed lying, which is considered as a defensive feedback to the questionnaire rather than actual lying. The validity and consistency of this tool were reported to be 94% in a previous study indicating its consistency, reproducibility and accuracy (12). Delaram et al. reported the validity of the CSEI to be 90% and 93%, respectively by test-retest (13).

The data were analyzed by descriptive and analytical statistics consisting of paired t-test, independent t-test, chi-square test and Mann-Whitney test in SPSS version 20.

RESULTS

The mean age of the participants was 14.15 ± 3.12 and 15.21 ± 3.09 years in the intervention and control groups, respectively. Duration of asthma was 26.38 ± 19.88 and 25.89 ± 23.56 months in the intervention and control groups, respectively and 68.8% and 59.4% of the participants in the intervention and control groups, respectively were males.

Among fathers, 43.8% in the intervention group and 46.9% in the control group had high school diploma. Among mothers, 37.5% in the intervention group and 50% in the control group had high school diploma. Also, with regard to the fathers' occupation, 75% in the intervention group and 71.9% in the control group were self-employed,

and among mothers 93.8% in the intervention group and 90.6% in the control group were housewives.

Independent t-test, analysis of variance, and Mann-Whitney test indicated no significant difference between the two groups in age ($P=0.21$), duration of asthma ($P=0.94$), gender ($P=0.30$), fathers' and mothers' level of education ($P=0.75$ and 0.68 , respectively) or fathers' and mothers' occupation ($P=0.12$ and 0.5 , respectively). Therefore, the two groups were matched by these variables.

Independent t-test showed a significant difference in the mean score of self-esteem in the patients after the training in the intervention and control groups ($P<0.05$), while this difference was not statistically significant before the intervention in the two groups (Tables 1). Also, paired t-test exhibited a significant difference in the mean score of self-esteem before and after the training in the intervention group ($P<0.05$), but the difference was not statistically significant for the control group ($P>0.05$) (Tables 1 and 2).

Table 1. Comparison of the mean score of self-esteem in the two groups before and after training

Group	Time			
	Before training		After training	
	Mean	SD	Mean	SD
Intervention group	28.34	5.07	31.53	2.52
Control group	28.12	4.74	27.90	5.69
Independent t-test results	P=0.85		P=0.002	

Table 2. Comparison of the mean score of self-esteem in the intervention and control groups before and after training

Time	Group	Control group		Intervention group	
		Mean	SD	Mean	SD
Before		28.12	4.74	28.34	5.07
After		27.90	5.69	31.53	2.52
Paired t-test results		P=0.86		P=0.003	

DISCUSSION

Nowadays, chronic diseases are considered as the biggest challenges in the community health (14). Asthma is a chronic disease in adolescence, which can cause mental and physical tensions in adolescents (15). Therefore, since a

significant requirement of the adolescents suffering from chronic diseases is the ability to give meaning to life to be empowered in healthcare-related decision taking, the responsibility of the healthcare team, particularly nurses, is to assist adolescents in achieving this goal through identifying relevant factors and highlighting the feeling of being valuable.

In the present study the two groups were not different in demographics before the intervention and hence the findings could be explained by high efficacy of Orem's model-based intervention. Consistent with the findings on participants' demographics in the present study, Altay et al. showed that most adolescents in the treatment and control groups were 12-14 years old (67.5%) and were males (72%) (1). In a study by Perosa et al, age range of participants in the treatment and control groups was 7-15 years (16).

Also, our findings indicated that the training program based on Orem's self-care model caused promotion of self-esteem in the adolescents with asthma, so that the self-esteem mean score in treatment group after the training was significantly different from that prior to the training. Attending sessions in the hospital's clinical skills center for the treatment group, use of educational aids such as models, PowerPoint and movies, various methods including speech and brainstorming and above all presence of parents in the training sessions could have contributed to the high efficacy of the intervention. In this regard, Manchana et al, in their study on training interventions and self-care for patients with asthma indicated that training classes resulted in an increase in the level of knowledge, change in therapeutic practices, self-control of disease condition and overall improvement of self-care among them (5). In a study by Wolf et al, training classes attended by asthmatic children caused improvement of lung function, decreased medical visits, decreased missed school days and ultimately resulted in enhancement of self-esteem in them (17). In addition, Letitre et al. argued that mental and psychological problems such as anxiety and depression caused

unsatisfactory disease control and declined self-esteem, while correct and appropriate control of disease led to increased self-esteem in asthmatic children (7).

As indicated by Srof et al, in their study on the effect of training of 13-18 year old asthmatic patients, the training increased self-care and self-sufficiency of children (18). Therefore, as these children's self-sufficiency increased by training programs, their self-esteem is expected to promote and the disease symptoms can be controlled more efficiently. Wood and Bolyard demonstrated that face-to-face training of asthmatic patients caused a decrease in emergency visits, hospitalization and subsequently the treatment costs (19).

A strength of the present study was the presence of a subspecialist of asthma and allergy at the sessions since he answered the patients' all questions, probably contributing positively to the findings. In light of the significance of psychological factors such as self-esteem for development and/or exacerbation of asthma conditions, empowerment strategies taught to the participants by the researcher and a physician resulted in their active involvement in self-care and consequent promotion of their self-esteem. Rhee et al. demonstrated that self-care training of asthmatic patients brought about positive attitudes in them (20).

Kaur et al. indicated that Orem's self-care model-based training increased self-care in patients with asthma (21). Cano-Garcinuño et al. demonstrated that attending training classes by 9-13 year old asthmatic children caused an increase in their knowledge about the disease (22). Increased knowledge and capability to control the disease in children could bring about change in their self-esteem and efficient control of the disease. Prabhakaran et al. indicated that holding training classes by the healthcare professionals for asthmatic patients is the key to naturalize efficient self-care (23).

Since the parents attended all training sessions accompanying their children and their questions were answered in the present study, the adolescents' self-sufficiency and self-esteem could be affected positively. Similarly Preechawong et al. indicated that increased

performance of parents contributed positively to promotion of adolescents' self-esteem and their coping with the disease (8).

As adolescence is a period of life with many tensions, and chronic diseases have in-depth influence on psychological-mental conditions in adolescents, they should not be left alone and pharmacotherapy alone is not sufficient for them. Predisposition to disease in adolescents makes them to be unconsciously affected by disease and partially compromises their confidence and feeling of being valuable. Hence implementation of training programs such as the one used in this study could be useful.

CONCLUSION

Based on the findings of the present study and for promotion of self-esteem of asthmatic patients, nurses, in addition to training and coaching adolescents, are recommended to help them take the responsibility of self-care, which could contribute positively to sense of value and efficiency among them. Therefore, it is recommended to use this model as an appropriate approach alongside other therapeutic practices.

Study limitations and ways to overcome them:

A limitation of this study was short duration of training and therefore this study failed to examine long-term effects of this intervention. Further research is recommended to assess long-term effects of this training model to collect reliable data in this area.

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