Effectiveness of educational programs based on Pender's theory on the health and symptoms in patients with obsessive - compulsive disorder

Maryam Radmehr [1]; Tahereh Ashktorab[2] *; Leila Neisi[3]

[1]Instructor, Department of nursing and midwifery Dezful Branch, Islamic Azad University, Dezful, Iran
[2]Assistant Professor of Nursing, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran
[3]Instructor, Department of nursing and midwifery Dezful Branch, Islamic Azad University, Dezful, Iran

Abstract: Introduction: obsessive – compulsive disorder is a chronic disease with prevalence 2% to 3% general community and estimates 40% of society in Iran. Now, research has shown that the cause of many chronic diseases is lifestyle and human behavior and health promoting behavior is one of the best ways by which people can maintain their health and control. The aim of this study is promoting of health lifestyle patients with obsessive - compulsive disorder based on the teachings Pender health promotion theory and its subsequent effects on symptoms disease. **Methods:** The sample included 8 patients who were eligible under the program of volunteer training Pender health promotion model and were followed for 3 months. Tools used in this research were Health Promoting Lifestyle Profile II and Madsly Inventory to identify symptom obsessive - compulsive disorder. **Results:** The results showed a significant difference between mean scores of health promoting lifestyle before and after the intervention (p = 0/01) such that educational programs promoting healthy lifestyles increases significantly in the six dimension excluding the responsibility and spirituality. Although the mean scores for symptoms of obsessive - compulsive decreased after the intervention but these differences were not significant (P = 0.054) however, this difference in the scales of doubt -task and revision (P = 0/04) was significant. **Discussion:** Despite the limitations of existing in this research to generalize the results including small numbers of samples and the lack of control group, however, in conclusion, this study can be primary study the effect of educational program provided by nurses for promoting patients' health with chronic disease, obsessive – compulsive and even reduced some their symptoms.
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1. Introduction

Obsessive-compulsive disorder (OCD) is one of the most common psychiatric disorders noticed by western psychiatrists since 19th century (1, 2). The main symptoms of this complicated syndrome are unwanted, frequent and intrusive thoughts (*Obsessive thoughts)* followed by some frequent and intrusive behaviors (*Compulsive behaviors*). Indeed, the patient performs such behavior to escape from his/her paralyzing and endless anxiety or neutralize the obsessive thoughts (3, 4, and 5). The obsessive-compulsive patients have insights about their disease. It means that these patients know that their thoughts and behaviors are abnormal and inappropriate for their personality. According to psychological classifications, the obsession is one of severe neuroses diminishing the patient's mental and behavioral balance and accommodation with environment (6). In 2002, the World Health Organization (WHO) reported that Obsessive-compulsive disorder is responsible for the 5 cases of each 10 cases of disability in the world and the prevalence of this disorder are increasing dramatically in rich developed countries(7). 2 to 3 percent of general population can be suffered by obsessive-compulsive disorder in their life. It has been estimated that 10 percent of outpatient visits of psychiatric clinics and offices are related to this disorder (2). The prevalence of the obsessive-compulsive disorder is 2-fold higher than schizophrenia and bipolar disorders (8). The website of Iranian scientific database has published that the prevalence of obsessive-compulsive personality disorder is about 40 percent in Iran (9). The adolescence and early adulthood are the common ages of involvement by the disorder. No different rates of the involvement can be found among males, females and children of different ethnicity, cultural background, and social and educational level (4). The theories about the disorder and its related etiology proposed by various psychiatrists up to now have no confirmed experimental basis and no effective therapeutic measures have been provided through these theories (1). The studies demonstrated that the disorder is resistant to treatments. The treatments last averagely about 14 to 17 years since the onset of the

disease (4). Some of experts called the disorder as "latent epidemic" (8). Similar to other chronic diseases, some risk factors have been proposed for the obsessive-compulsive disorder. Consequently, the correction of such risk factors should not be omitted and replaced by the medications. According to the today's researches, many of the chronic disease are originated from inappropriate human lifestyle and behaviors. Hence, the health-promoting behaviors are one of the best approaches to keep public health (10). Improving the public health through lifestyle modification and control and omitting of the risk factors can result in minimized cost and side effects, decreased hospitalization and lower interfering with daily activities. In addition, such measures can increase the effectiveness of medical and non-medical treatments and improve the quality of life. The lifestyle is a collection of the behaviors that an individual choose them as a pattern for life. Lifestyle modification should be considered as an essential factor to improve the symptoms and minimize the side effects along with other therapeutic options (12).

One of new health-promoting patterns is Pender's health promotion theory developed in 2005. Pender, who is a theorist of nursing, based his theory on theory of social learning and emphasized on importance of motivating factors and health behaviors (13).This theory constitutes the theoretical framework of present study. (13). Pander's power in defining health is that he doesn't confine nurses and other health care teams to intervening in order to reduce the risk of disease and he gives more chances to nurses to examine individuals, families, and communities so that they try to improve health, and promote functional abilities and better life styles. This model which is one of the central theories in nursing, directs nurses so that they would systematically examine clients in terms of perceived self- efficacy, perceived barriers and benefits of action, and interpersonal and situational influences and would be able to set the arrangements for promoting health-enhancing behavior in individuals based on their own individual interventions (14). Many studies have indicated that the rate of depression related to obsessive-compulsive disorder and the intensity of obsessive-compulsive symptoms highly affect life quality and some reported that getting better scores in physical aspect of life quality was resulted by employment (15). In this research, the researchers have triedin addition to study different aspects of such patients' lives, which have a special position in prioritizing to be offered various non-drug treatments, also consider doing behaviors which will promote the health of such patients. In their studies Bystritsky and et al (1999) emphasized that written treatment procedures of patients with obsessive-compulsive disorder will affect their perception and subjective scale of their lives quality more than objective parameters such as family support, disability, and employment and specialists are needed to – while treating patients with chronic diseases such as obsessive-compulsive disorder – care about improving the quality of their lives in addition to practicing usual treatments (15). Many studies have reported the effect of educational programs based on Pander's model on enhancing health-promoting lifestyle of healthy people and patients with chronic diseases (16, 17, and 18). The findings of Safabakhsh and et al(2004) studies showed that educational programs based on Pander's theory after 3 sessions of teaching the method of having healthy life and 3 months pursuing, caused a meaningful increase of patients' health-promoting lifestyle scores after coronary bypass surgery in experimental group (11).

1.1. Research materials and methodology:

This research is a quasi-experimental study with before and after intervention control. The research population includes all patients with obsessive-compulsive disorder who have been admitted to two psychiatric clinics in Dezful. Purposeful sampling initially consisted of 9 volunteer patients introduced by psychiatrists who had inclusion criteria to participate in the study such as not having another chronic mental disorder like schizophrenia and bipolar disorders, being adult, and being accompanied by one family member in all stages of training programs. In the end, the samples reduced to 8 people because one of them was not present in training sessions. The tools used in this research were Health Promoting Lifestyle Profile II_1 (HPLPII) and Maudsley Obsessive Compulsive Inventory (MOCI) $_2$. Health Promoting Lifestyle Profile II which is planned based on Pander's model, was first prepared by Walker and Hill Polerecky$_3$ and then some changes were made in it in 2002. This profile includes a multi-dimensional assessment of health promoting behavior and it measures the frequency of applying health promoting behavior in six dimensions of taking health responsibility, physical activity, nutrition, spiritual growth, stress management and interpersonal behavior. The profile contains 52 questions and is scored by using 4-point Likert Scale as Never (1), Sometimes (2), Usually (3), and Always (4). The range of total score of health promoting behavior is 50-208 and for each dimension a separate score is calculated. Higher scores represent doing healthier behavior and lifestyle. Profile makers suggest that the scores must be studied and interpreted in 1-4 scales. Cronbach's alpha and test-retest reliability of this profile in many domestic and foreign studies is reported to be 0.8 -

0.93. Cronbach's alpha in each dimension is reported as 0.7 – 0.94. (17, 21, 22, 23). The profile used in this research was the copy that had been translated and confirmed by 10 professors teaching English at Shiraz Medical School in 2004 (11). Maudsley obsessive compulsive inventory is one of the most popular tools based on patients' report with rumination and sensitive to treatment changes. This tool was made in Maudsley Hospital by Harrison and Rachman in 1977. This inventory contains 30 questions with True or False options for each question. In this inventory there is a general score for obsession and separate scores for each disorder including checking, washing / cleaning, slowness / repetition, doubting / conscientiousness. Test score is between 1 to 30 and high score indicates more signs of mental-practical obsession. This inventory is used as a norm in many countries and at present it has been translated to persian as well and has high reliability and validity. Norman$_1$ and et al (1999) have reported its. Cronbach's alpha as 0.85. In Iran Ghasemzade (2001) studied the content validity of this tool and Aliloo calculated the test –retest reliability of this tool in students of Tehran Teachers Training University (Tarbiat Moalem-E Tehran) which was 0.82 (25, 5). One of the shortcomings of this inventory is that there are just two questions in relation to mental rumination which could not be a proper criterion for judgment on this kind of obsession. In this research the content validity of the tools was approved of by 7 members of university board of science with master degree in nursing and psychiatry and 3 patients with obsessive-compulsive disorder. Due to large number of questions and little number of samples, reliability was measured on 16 completed scales in the end, and Cronbach's alpha for health promoting lifestyle profile II and Maudsley obsessive-compulsive inventory was 0.94 and 0.88 respectively.

2. Material and Methods

Ethical approval was granted by the research ethics committees of the research board Islamic azad university Dezful. All subjects who signed informed consent form attended training programs which were held in two 60-minute sessions in four-person groups in one-week interval with one certain member of their family in training and treatment center of Dezful great hospital. Participants in these classes were trained based on Pender's teachings in relation to six dimensions including health responsibility, physical activity, nutrition, interpersonal relations, stress management, and spiritual growth. In these sessions educational clips were played, pamphlet and CDs were distributed and some books were introduced and handed out to the participants to be studied. During three months the subjects and their single family member were separately guided through telephone conversations to perform health promoting behavior and their problems and barriers were considered and examined and health promoting lifestyle profile and Maudsley inventory were completed before the sessions and after three months of treatment and studying in presence of researchers. All data was analyzed by SPSS 16 software and descriptive statistics including (frequencies, means, Skew Index, data distribution curves) and also inferential statistics (T-Test and Wilcoxon Test) were used.

3. Results

All patients in this research were female. Most of them hadn't got diploma, and were married, housewives, and in their 20th (20 -29). They had developed this disease since 1-5 years ago when most of them were 20-39 years old. The entire experimental group was treated by Clomipramine for 7 months to 10 years. 4 patients had been hospitalized due to this disorder and were treated by medications. Health promoting lifestyle average score was 111.37 out of 208 before intervention and 139.75 after intervention. This difference was in favor of after invention score in increasing health promoting lifestyle scores of the subjects. The majority of subjects' answers to health promoting behavior before intervention were so that half of them had chosen "Never", "Sometimes" options and the other half had chosen "Usually" in four-point Likert scale of this profile. After intervention most of them had answered "sometimes" and "Usually". The highest scores of participants' health promoting lifestyle before intervention were related to spiritual growth, interpersonal relations, nutrition, health responsibility, stress management, and physical activity respectively. (Table1).

Table 1: health promoting lifestyle scores and their micro scales before and after intervention

Group	Tool's Total Score	Subjects Score Before Intervention	Subjects scores After Intervention
		Average	Average
Lifestyle	208	111/37	139/75
Responsibility	36	19/62	24/87
Physical activity	32	11/00	18/37
Nutrition	36	20/62	25/50
Spirituality	36	22/37	24/50
INTERPERSONAL RELATIONS	36	21/12	25/25
Stress Management	32	16/62	21/25

Total average score of obsessive-compulsive symptoms was 18.87 out of 30 before intervention which reduced to 13.5 after intervention. The maximum scores of obsessive-compulsive symptoms before intervention were related to doubting - conscientiousness, rechecking, slowness - repetition, and washing (Table 2).

Table 2: obsessive-compulsive disorder scores and subscales before and after intervention

Group	Tool's Total score	Subjects Score Before Intervention	Subjects scores After Intervention
		Average	Average
Obsession	*30	18/87	13/50
Rechecking	9	6/25	3/87
Washing	11	5/62	5/00
Slowness-Repetition	7	4/00	2/75
Doubting Conscientiousness	7	5/37	3/87

* Subscale scores are common in several questions

With drawing distribution curve of lifestyle scores and obsessive-compulsive symptoms before and after intervention and also calculating Pearson's skew index and Skew Coefficient it was known that these scores had normal distribution, therefore it was possible to administer parametric paired t-test in order to compare and modify changes although nonparametric Wilcoxon test was also used in these cases which generally had similar results with t-test except in total obsessive-compulsive scores. Findings indicated that there was a significant difference between average scores of lifestyle before and after intervention (P=0.01). In other words, educational programs improved health promoting lifestyle of patients with obsessive-compulsive disorder. Also the results in subscales of this tool indicated a significant difference between the scores of physical activities, nutrition, interpersonal relations and stress management but this difference was not significant in subscales of responsibility and spirituality.

Research findings also indicated that the difference between total average scores of obsessive-compulsive symptoms before and after intervention was not significant (P=0.053) but there was a significant difference in subscales of this tool that is rechecking and doubting – conscientiousness (P=0.04). In other words, health promoting educational programs decreased obsessive-compulsive signs in all kinds of rechecking and doubting – conscientiousness.

Pearson's correlation coefficient didn't show any meaningful relations between scores of obsessive-compulsive signs of Maudsley inventory and scores of health promoting lifestyle profile in this research.

4. Discussions

Total average score of the subjects' health promoting lifestyle profile was 111.37 before intervention with the highest score related to spirituality and interpersonal relations and lowest one related to physical activity and stress management. The findings of a research conducted by Motlagh and et al(2011)on 440 students at medical school of Yazd university indicated that the average score of the subjects' health promoting lifestyle profile was 130.3 with the highest score related to the subscale of spirituality and the lowest score related to physical activity (10).also In Jalili's and et al(2008) research, total score of students' lifestyle is reported as 134.6 (25). Comparison of findings in these two researches and present research shows that the score of health promoting lifestyle profile in patients with obsessive-compulsive disorder in this research is less healthy. Also, the results of the highest and the lowest score in different dimensions of this profile matched each other except in stress management. Spirituality high score in these findings might be related to the culture and religious system of Iranian society. Every time people feel they are growing, believe that their lives are purposeful, are waiting for future, and are trying to achieve their long term goals in their lives and feel that there are connected to a superpower above them, indicate the signs of health in this dimension (10). Getting the lowest score in physical activities seems to be a general health problem in developing societies and in our society (21). Low scores in stress management, with regard to possible causes of developing obsession and the individual's inability in dealing with problems and stress, is not far fetched (1) to be related to paying more attention to controlling and preventing the side effects of not performing these kinds of behavior among healthy people and the patients. In a research conducted by kheirgo and et al(2012), in comparing health promoting lifestyle profile of healthy people and patients with chronic rheumatoid arthritis, the results indicated a significant statistical difference and lower score of patients in all dimensions of the profile except stress management (26). In Shu-Ving Hou's study (2010), the results showed that the scores of life quality of patients with obsessive-compulsive disorder – by applying QQL (Quality of Life) scale in general dimensions, psychology and social support were lower than control group (healthy individuals) (27).Subjects participating in this research showed a significant increase of scores in health promoting lifestyle profile (P=0.01). Moreover, a significant increase in subscales of physical activities, nutrition, interpersonal relations and stress management was observed. However, these educational programs didn't show any significant increase in responsibility and spirituality (P=0.054). In Bystritsky's study (1999), the results indicated significant improvement of life quality of the patients after suitable nondrug treatments of obsessive-compulsive disorder (15). The findings of present research match with the results of Carreno and et al (2006) after implementing similar educational programs in a group of ordinary people. Carreno reported a significant increase of total average scores of health promoting lifestyle profile in two different groups of women (P=0.0001) based on Pander's model. This

increase was in all six dimensions of lifestyle profile (20). Therefore implemented educational programs in this research in two dimensions of responsibility and spirituality couldn't make significant changes in increasing this form of healthy behavior and modification in implementing these programs in these two dimensions seems to be needed. Total average score of obsessive compulsive disorder signs of the subjects in this research was 18.87 out of 30 before intervention. The lowest score of obsessive-compulsive signs before intervention was related to washing and the highest score was related to the subscales of doubting – conscientiousness. In a research done by Imani and et al, the total average score of obsessive-compulsive signs is reported to be 21 / 43 for 43 patients (2). In a research done by Sajadian and et al, the total average score of obsessive-compulsive signs (18 patients) was 16 and the highest score in experimental group was related to doubting – conscientiousness subscales and the lowest score was related to washing scale which match with the results of present research (23). Considering the results, it seems that the scores of the patients' obsessive-compulsive signs in theses researches were average or above average. In Kaplan and Saduk textbook of psychiatry, pollution is mentioned as the most common pattern of obsessive-compulsive signs which is followed by washing and the patterns of doubting, obtrusive thoughts (rechecking) and slowness are respectively ranked in next stages in terms of being common (27). However, it seems that in this research and study of Sajadian and et al(2008), patients got higher score in patterns of doubting and conscientiousness and this difference requires more examination of these obsessive-compulsive patterns in our society(23). Of course, one of the causes of this difference might be related to the complaint of patients who have developed washing pattern and their going to clinics for treatment and also related to the side effects and problems of this unhealthy behavior in comparison to doubting –conscientiousness pattern. Moreover, this kind of disorder is faster and more clearly recognized by family members. Observing insignificant relationship between the scores of health promoting lifestyle profile and common obsessive-compulsive disorder signs in this research matches with Bystritsky's study (1999) in the usage of life quality scale (15). Although the average score of obsessive-compulsive signs reduced to 13.5 after intervention, this difference was not statistically significant (P=0.053) even though it might be considered significant by some experts. Moreover, in this research the average score of obsessive-compulsive signs reduced in for dimensions of inventory but it was statistically significant only in two dimensions that is rechecking and doubting – conscientiousness.

In his studies, the researcher didn't find any research in relation to health promotion of patients with obsessive-compulsive disorder through intervention and its effect on reducing obsessive-compulsive signs ; however, numerous researches have been done on effective nondrug methods of reducing obsessive-compulsive signs which have often been done among small groups of patients with obsessive-compulsive disorder with 1- 12 subjects in experimental group and with or without control group and the results have been reported to be significant and positive in all cases. some examples of these interventions were mind awareness, cognitive behavioral treatment, separate mind awareness, and exposure which were to some extent and in some cases indirectly related to the teachings of Pender's health promotion model (2, 29, 31, 23, 32, 28). Since all the subjects in this research were treated by medications for 7 months to 10 years, it seems that medication effects together with educational programs could significantly reduce the signs of obsession in some dimensions during these three months. Non-drug treatments especially when the patient is in regular, constant touch with an interested, compassionate and encouraging specialist might help the patient to continue to their usual performance by relying on him and without such help, the patients would be completely overwhelmed by their own symptoms (28). In this research, the subjects remarked that educational programs of healthy behavior and recommendations to do them by one member of treatment team which is held with interest and time investment, would be more acceptable for them than being educated through sources and other people and the constant contact of the researchers with subjects specially the patients with mental disorders during three months would impress the patients to care about doing healthy behavior. Family psychotherapy would also help the patients and would reduce family discrepancy in relation to the patient and making a therapeutic alliance with healthy family members would definitely help the patient (28). According to the subjects of the research, in implementing educational programs of this research, the presence of the patients' companions and their attention to teachings of Bender's model seems to be very significant in different aspects such as active participation of the subjects in classes, pursuing and doing activities.

In treating the patients with obsessive-compulsive disorder, the following non-medication treatments are always discussed: reducing stress, changing life conditions, employment and amusement, communication and living in a

community, moral and spiritual methods and proving their pride and self- efficacy so that they can manage their own affairs and save themselves (33). All these matters have been somehow considered in teachings of Pender's model based on his theoretical structure and can be offered quite well by the nurses.

1.4. Conclusion:

Nowadays, caring about the quality of life is one of the concerns of international societies and researchers; and World Health Organization (WHO) as a pioneering organization, has recently paid special attention to developing assessment and evaluation of health such as birth and death beyond traditional health criteria (34). Obsessive-compulsive disorder is a common chronic mental disorder all around the world and well-controlled studies have concluded that main treatments associated with other affective programs would be very effective and efficient in achieving treatment goals very quickly (32). The results of this research showed that implementing health promotion programs very simply and in a short time by nurses can promote healthier lifestyle nearly in all its dimensions in patients with obsessive-compulsive disorder. Moreover, observing the significant decrease of some signs of obsessive-compulsive disorder after implementing educational programs which was not much predictable marks the importance of paying attention to these programs together with other treatment methods. Few number of volunteer participants and impossibility of attending more participants, and not having a control group are some limitations of this research in generalizing the findings; however, this study by its own can be considered as an initial research on paying attention to the implementation of such educational programs by nurses, and can be accompanied by novel ideas and thoughts to increase life quality and to treat such patients more effectively

2.4. Suggestions:

Considering the limitations of this research, it is suggested that the effect of these educational programs based on Pender's model be studied in certain larger groups if possible in terms of attending criteria and having a control group in order to be able to generalize the results more. But based on their experience in this research, the researchers suggest that these educational programs be offered to the patients quite individually by nurses

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Corresponding Author:
Tahereh Ashktorab
Assistant Professor of Nursing, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran
Email: tahereh ashktorab@gmail.com

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