Pakistan Journal of Clinical Psychology, 2019, 18, 1, 33-46 | PJCP

EFFECTIVENESS OF CBT IN TREATING DEPRESSIVE SYMPTOMS OF ASTHMA PATIENTS.

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ABSTRACT

Objective: *The study was conducted to screen out the depressive symptoms of asthma patients and then dealing with the symptoms by using Cognitive Behavior Therapy as an intervention.*
Design: *Pretest-Posttest study design.*
Duration and Place of the Study: *The study was carried out at NESCOM hospital, Islamabad from November 2017 to May 2018.*
Subjects and Method: *A sample of 15 asthma patients (age range20-60 years, was taken from the general medicine ward of NESCOM hospital, Islamabad. DASS-21 was used for identification of depressive symptoms. The study comprised of 3 stages including pre-assessment stage, intervention stage and post-assessment stage. In Pre-assessment, the depression subscale of DASS-21 was administered and then CBT interventions were used. On completion of 8 sessions the post-assessment was done.*
Results and Conclusion: *Results indicated that there is a significant difference (on paired-sample t-test) in the score of depressive symptoms of asthma patients after getting the CBT. Present study has significant practicality in clinical settings.*

Keywords*: Depressive Symptoms; Cognitive Behavior Therapy; Asthma*,

INTRODUCTION

Chronic illness is more than its physiological effect; it can make an individual suffer from mental stress that can damage his/her view of self, the world and others. One of the chronic diseases is Bronchial asthma which is defined as a lung disease causing difficulty in breathing. Asthma along with Chronic obstructive pulmonary disease (COPD) will be the third leading cause of death globally by the year 2020 according to the reports of WHO as its prevalence is increasing rapidly across the globe (Masoli, Fabian, Holt, Beasley, & Global Initiative for Asthma (GINA) Program, 2004). The prevalence of asthma in the 6th most populous country Pakistan is relatively high. According to Motiani, Haidri, and Rizvi (2011), more than 20 million Pakistani suffers from asthma.

The intermingling of medical condition and mental illness has been reported by world federation of mental health (Lvbijaro, 2010). Individuals suffering from depression or depressive symptoms show extremely negative mood and a sense of helplessness, along with feelings of fatigue, insomnia, unhappiness, lack of energy and loss of interest and pleasure in almost all the activities of life. Asthma patients are at higher risk of developing depressive symptoms. Patients' wellbeing has been affected markedly by this kind of complex interaction between asthma and one's mental health (Pumar et al., 2014). Asthma is associated with co morbid depression which increases the hospitalization and mortality rate among patients (Jamalimotlagh Rezaei, Fata, Jamaati, & Masafi, 2012). Findings of one study suggest that depressive symptoms are more common in asthma population and are linked with worsening of the condition of asthma. Results showed around 46% depressive symptoms are prevalent in patients of bronchial asthma (Heslop et al., 2013).

In twin cities (Rawalpindi & Islamabad) of Pakistan, study conducted for the occurrence of depression on a sample of 382 asthmatic patients suggested that there is existence of depression and reported the need of psychological interventions to address depression among asthma patients (Malik, Khan, Hussain & Hashmi, 2017). The patient of chronic medical illness having psychological symptoms is difficult to manage, but the use of cognitive behavior therapy has been proved to be the effective therapy for the management of psychological symptoms in patients of chronic medical illness (White, 2001).

Cognitive Behavioral Therapy is considered as effective treatment for psychological symptoms (Kew, Nashed, Dulay & Yorke, 2016). The treatment mainly focuses on present and is short term, problem oriented and goal directed. A collaborative therapeutic alliance between therapist and the client is required for the treatment process. The therapy uses a number of strategies and techniques in order to assist people to assess and modify their negative cognitions and to promote their emotional health. The success of this approach lies in the elements such as homework assignment, client feedback and follow-up sessions (Butler, Chapman, Forman, & Beck, 2006).

Parry and his colleagues (2012), reported changes in psychological status of asthma patients after providing them CBT as it has much to offer to these patients. Cognitive factors help the individuals in understanding the fear that provokes the anxiety and behavioral approach provides the relaxation technique to cope up with situation. Findings of the study suggested improvement of psychological symptoms in asthma patients after receiving the CBT interventions. In a study, two groups of asthma patients were compared with CBT and with education having depression. 8 CBT sessions were given to patients' groups. Results indicated significant improvement in group received CBT as compared to the group delivered with education and awareness only. Effectiveness of treatment in reduction of depressive symptoms requires CBT along with education (Kunik , Veazey, Cully et al., 2008).

Kunik and colleagues (2008) in a study based on pre and post intervention between two groups of elderly asthma patients found that the group receiving psychological intervention including relaxation training, cognitive restructuring and graduated practice produced significant reduction in anxiety and depressive symptoms as compared to the group who received only education and awareness in the session. Result suggested that CBT is significant in reducing the depressive symptoms among elderly asthma patients.

The main objective of the present study was to assess the effectiveness of CBT in reducing depressive symptoms among patients suffering from asthma. In current study the treatment of asthma generally focuses on the minimization of depressive symptoms by using CBT. It was hypothesized that application of CBT will reduce depressive symptoms among patients suffering from asthma.

METHOD

Participants

The sample comprised of 15 participants with an age range from 20-60 years. 20% participants were males and 80% were females, taken from NESCOM hospital Islamabad. The inclusion criteria for the study was to scan those patients who are under treatment with a diagnosis of asthma, who were of either gender with age range between 20 to 60 years and the duration of illness must be 2-10 years and above.

Measures

Demographic Form

A self-developed demographic form was used to get personal information (name, age, education, family system, and history of problem related to asthama).

Depression, Anxiety and Stress Scale – 21 (DASS-21) (Aslam, 2007)

Depression Subscales of Depression, Anxiety and Stress Scale – 21 (DASS-21) (Aslam, 2007) was used. DASS was developed originally by Lovibond and Lovibond (1995). In this research Urdu version of DASS prepared by Aslam (2007) was used. DASS is a quantitative measure of distress along the axis of depression, anxiety and stress. The 21-item shortened version of the Depression Anxiety and Stress Scale (DASS-21) is a self-report 4-point Likert-type measure. The depression items assess low positive affect, low self-esteem, hopelessness, and lack of interest and lack of energy.

Procedure

The topic under study was evaluated and approved by the Ethical Review Board of Professional Psychology Department, Bahria Univesity,Islamabad. The study was conducted in three phases i.e. pre assessment phase, intervention phase and post assessment phase. In pre assessment phase, screening of patients were made by using DASS-21, those who scored high on the depression subscale were then included in the second phase in which detailed history was taken from the patients by using demographic sheet. For intervention, Cognitive behavior therapy was used which was pioneered by Beck in 1960s. In post assessment

phase DASS-21 was used after 8 sessions of therapy to assess the effectiveness of therapy. The whole process of the study was completed on the ethical grounds. For quantitative analysis the data was analyzed by using statistical package for social sciences (SPSS-20).

The intervention comprised of following phases:

Pre-assessment Phase

In this phase written informed consent was obtained from the participants and they were informed briefly about the purpose of the study. The patients were assessed by using the Depression subscale of DASS-21, for assessment of depressive symptoms.

Intervention phase

This phase was followed by pre-assessment phase in which patients received the intervention. Cognitive behavior therapy was given to the patients as intervention. A combination of cognitive and behavioral techniques was used in this phase with patients under the therapist's supervision. Each session consisted of feedback, goal setting and homework for the patient. Following techniques were used:

Psycho education

This is basically providing the client awareness and information about emotional problems, mental disorders and other issues. The therapist delivers this to those patients who are experiencing the issue, to those who are at risk and those who have developed the problem. It includes the information for further use of strategies and interventions (Seligman, 2014).

Behavioral Techniques

Behavioral techniques such as progressive muscle relaxation, deep breathing and walking helps patients to increase the activities by reducing the tension and stress associated with depressive symptoms. It encourages those patients who are not able to practice their daily activities by improving their mood and energy level (Curran, David, Dean & Houghton, 2012).

Social Skills Training

This technique was used to increase the pleasurable activities by activity scheduling in clients having feelings of sadness and apprehension. New behaviors and ways of thinking were introduced that result in improving their negative state of mind (Cuijpers, Straten, Warmerdam, & Andersson, 2008).

Cognitive Restructuring

This technique was used to modify client's maladaptive and negative thoughts and cognitive distortions or errors by identifying them. For example, the most common cognitive distortion is catastrophizing; the thoughts related to this distortion are reframed by the therapist with the use of cognitive restructuring technique (Sanders, 2013). This technique helps the clients to change their negative thoughts into positive and realistic thoughts which ultimately enhance the intervention process.

Problem Solving Techniques

This technique offers the client to learn those skills required for the handling of their stress, anxiety, emotional conflicts and other daily life issues (Nezu, 2010). It helps the clients to identify the problem first and then generate a list of possible solutions, evaluating the strength and weaknesses, choosing a possible solution to implement and then monitor and evaluate the outcomes. In result of this implementation self-efficacy of patients increases. Problem solving technique can be used to reduce the stress of patients with physical illness.

Self-Management Strategies

In order to improve disease management and self-efficacy of clients it is essential to guide and mentor them about health behavior changes. Self-efficacy enables the client to motivate themselves by observing and analyzing themselves (Seligman, 2014).

Skills Review and Planning for Maintenance of Gains

This technique helps the client to review those skills they have learned in the intervention. This includes use of those techniques and strategies in their daily life to cope with the stressors and implementation of them to reduce stress.

This phase basically is to encourage clients for their efforts and to facilitate them about prevention of relapse in future (Seligman, 2014).

Post assessment phase

In the final phase of the intervention, re assessment of the scale DASS-21 was carried out to determine the differences in psychological symptoms of patients and effectiveness of cognitive behavior therapy in reducing the psychological symptoms.

RESULTS

The sample comprised of n=15 participants with an age range from 20-60 years. 20% participants were males and 80% females. Mean and standard deviation (depression) of participants in pre assessment phase was (M=11.3, SD=6.07). Mean and standard deviation (depression) of participants in post assessment phase was (M=4.80, SD=1.82). (Table-1) Reliability for the sub scale depression was .65. Results of Paired-samples t-test indicated that level of depression was statistically significantly decreased in post assessment phase after receiving Cognitive Behavior Therapy as compared to pre assessment phase ($p<0.01$) (Table-2). Paired sample t-test analyses on marital status of asthma patients receiving cognitive behavior therapy has shown that depressive symptoms of individual who are married were reduced significantly in post assessment phase ($p<.005$) as compare to individuals who are not married (Table-3). Paired sample t-test has shown that there is a significant difference in depressive symptoms in post assessment phase of patients having nuclear family system ($p<.005$) (Table-4). The significant reduction in scores of depression in post assessment phase of the recent study is highlighted in table 5.

Table 1

Socio demographic information of patients with asthma (N = 15)

Demographics	***F***	***%***
Gender		
Male	3	20.0
Female	12	80.0
Family system		
Nuclear	10	66.7
Joint	5	33.3

Education		
Matric	7	46.7
Intermediate	1	6.7
BS	7	46.7
Marital status		
Single	5	33.3
Married	9	60.0
Widow	1	6.7
Employment status		
Employed	6	40.0
Unemployed	9	60.0
History of illness		
1 – 10 years	8	53.3
11-20 years	5	33.3
31 – 40 years	2	13.3

Results in table 1 indicates that there are 3 males and 12 females in a sample. 10 of them belong to nuclear family and 5 from joint family system. 7 of them have matriculation qualification, 1 has intermediate and 7 have BS. 6 of them were employed and 9 were unemployed.

Table 2
Psychometric Properties of Depression (Sub scale of DASS-21) (N=15)

Variables	***No. of Items***	***M***	***SD***	***Range***		***Skewness***	***Kurtosis***
				Min	***Max***		
Depression(Pre-phase)	07	11.3	6.07	04	24	.77	.06
Depression(Post-phase)	07	4.80	1.82	02	08	1.82	.34

Table 3

Paired sample t-test analysis between Pre and Post Assessment of CBT on Depressive symptoms (N=15)

Variables	*Pre*		*Post*		*r*	*t(df)*	*p*	*95% CI*	
	M	*SD*	*M*	*SD*				*LL*	*UL*
Depression	5.73	3.32	2.40	1.91	0.74	4.75(14)	.000	1.82	4.83

**p<0.01*

Table 4

Paired sample t-test analysis between Pre and Post Assessment of CBT on Depressive symptoms with demographic variable marital status (N=15)

Variables	*Pre*		*Post*		*r*	*t(df)*	*p*	*95% CI*	
	M	*SD*	*M*	*SD*				*LL*	*UL*
Depression (single)	7.80	4.56	2.80	.83	.88	2.84(4)	.047	.11	9.88
Depression (married)	4.55	2.06	2.11	.92	.68	4.61(8)	.002	1.22	3.66

**p<0.01, p<0.05*

Table 5
Paired sample t-test analysis between Pre and Post Assessment of CBT on Depressive symptoms with demographic variable Family System (N=15)

Variables	*Pre*		*Post*		*r*	*t(df)*	*p*	*95% CI*	
	M	*SD*	*M*	*SD*				*LL*	*UL*
Depression (nuclear)	6.10	3.75	2.50	.97	.716	3.63(9)	.005	1.35	5.84
Depression (joint)	5.00	2.44	2.20	.37	.854	3.50(4)	.025	.57	5.02

**p<0.01, p<0.001*

Table 6
Scores of Depression in Pre and Post Assessment Phase of Participants (n=15)

Case#	*Pre assessment score*	*Post assessment score*
Case 01	06	04
Case 02	06	04
Case 03	04	01
Case 04	06	04
Case 05	10	02
Case 06	24	08
Case 07	16	08
Case 08	08	04
Case 09	06	04
Case 10	22	06
Case 11	04	01
Case 12	06	04
Case 13	14	06
Case 14	06	04
Case 15	22	06

DISCUSSION

Cognitive behavior therapy is very effective in the treatment of illnesses like respiratory diseases (White, 2001). The use of cognitive and behavioral techniques with asthma patients yielded positive outcomes and reduction in depressive symptoms in the recent review. The same results were obtained by different researches in past in which use of psycho education, relaxation techniques and cognitive restructuring has produced strong results (Deshmukh, Toelle, Usherwood, Grady & Jenkins, 2008; Pbert et al., 2012).

CBT therapy uses a number of strategies and techniques in order to assist people to assess and modify their negative cognitions and to promote their emotional health. Other factors also play an important role for the effectiveness of therapy intervention such as family system and marital status. Present research findings have shown that application of cognitive behavior therapy was more effective among patients living in nuclear family system as compared to those living in joint family system. There are limited earlier researches that indicate the effect of family system on application of cognitive behavior therapy among patients of asthma. Paired sample t-test analyses on marital status of asthma patients receiving cognitive behavior therapy in this study has shown that depression among individuals who are married was reduced significantly in post assessment phase after receiving the therapy which means that support of a spouse produces better results in psychological treatment.

Conclusion

The present study proposes an imperative contribution in Pakistan as now a days people having medical diseases and suffer from co morbid psychological symptoms and many of them do not receive the significant treatment for that. Therefore, there is a dire need for such researches and studies to draw attention of people towards this. There are many important demographic variables which need to be considered while treating these clients.

Limitations and Recommendations

The research was conducted in Islamabad and researcher took only locale/hospital of Islamabad for sample which restricts the generalizability of results. In the sample the ratio between males and females was not equal, males were in less proportion due to which the findings of the research are limited for

males. In future studies sample should be collected from diverse locations and ratio between males and females should be taken equally for generalizability of results. Longitudinal studies should be done to assess the long term efficacy of cognitive behavior therapy. Longitudinal study can give significant preliminary validation for screening and providing intervention to patients with different medical diseases in primary health care settings in Pakistan. As the sample was having varied age range so in future the age focused data should be collected for a clear picture.

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