

Effectiveness of CBT on Depression and Anxiety Symptoms among COPD Patients

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Abstract

Introduction: Depression and anxiety impacts people of every age, sex, and ethnic background, with debilitating health care and disability costs. Due to the significant increased costs, lack of availability of health care, and associated social stigma, there is an increased need to find alternative, socially acceptable therapies like CBT (Cognitive behavior therapy) for the treatment of COPD symptoms like depression and anxiety.

Methods: The research design of the study was quasi-experimental one group pre-test post-test design. The subjects selected for the study were patients suffering from COPD. The sample of 30 patients of COPD who were admitted in hospital wards were selected using simple randomization technique. Interview technique was used to fill pre-test and post-test regarding depression and anxiety. Both the tools used- Beck's anxiety scale and Hamilton's depression scales were standardized. Data was collected and CBT program was administered to COPD patients. The analysed data was interpreted in the form of objectives and hypothesis.

Results: The collected data was analyzed by using descriptive and inferential statistics. The majorities of patients were females (53%) and were married (90%). The mean post-test depression score with standard deviation. (26.6 ± 6.5) was significantly higher than mean pretest depression score with standard deviation (22.8 ± 5.5). Similarly the mean post- test score of anxiety with standard deviation (19.7 ± 6.1) was significantly higher than mean pretest score with standard deviation (17.4 ± 5.5). The study findings revealed that there was negative co-relation (-0.18) between anxiety and depression. A significant association was found between level of post-test depression and anxiety with educational status.

Conclusion: There was negative correlation between post-test depression and anxiety scores. Cognitive behavior therapy was an effective therapeutic process in reducing anxiety and depression among COPD patients.

Keywords: COPD (Chronic obstructive pulmonary disease); WHO; Anxiety; Depression; CBT (Cognitive behavioral therapy)

Introduction

The report on Global Burden of Disease says that the point prevalence of unipolar depressive episodes to be 1.9% for men and 3.2% for women, and the one-year prevalence has been estimated to be 5.8% for men and 9.5% for women. Depression is also called the common cold of mental disorders. The most common causes of depression are genetics and biology, brain chemistry imbalance, poor nutrition, physical health problem, drugs, stressful life events, grief and loss, are the most commonly long diseases condition like COPD [1-3]. The Major risk factors of depression includes Family History of Mental Illness, Little or No Social Support, psychological factors, low socioeconomic status, female gender, chronic physical or mental disorders, major life changes and stress, little or age, insomnia, sleep disorders, mediations like pain relievers, sedatives, sleeping pills, cortisone drugs, seizure drugs [4-7].

Anxiety is an emotion characterized by an unpleasant state of inner turmoil, often accompanied by nervous behaviour such as pacing back and forth, somatic complaints, and rumination.

Depression and anxiety impacts people of every age, sex, and ethnic background, with debilitating health care and disability costs [8]. Due to the significant costs, lack of availability of care, and associated social stigma, there is an increased need to find alternative, socially acceptable therapies for the treatment of depression and anxiety.

A well-established, highly effective, and lasting treatment is called cognitive-behavioral therapy, or CBT. It focuses on identifying, understanding, and changing thinking and behavior patterns. Benefits

are usually seen in 12 to 16 weeks, depending on the individual. Cognitive therapy can be an effective way to defuse those thoughts. When used for depression, cognitive therapy provides a mental tool kit that can be used to challenge negative thoughts. Over the long term, cognitive therapy for depression can change the way a depressed person sees the world.

Methods

Variables

Independent variable: Cognitive behavior therapy.

Dependent variable: Anxiety and depression regarding COPD patient.

Inclusion criteria

The study included COPD patient:

- Available throughout the study period and willing to participate.

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- Able to speak and understand Hindi.

Exclusion criteria

The study excluded COPD patient:

- Had undergone any surgery.
- Had already diagnosed with any other disease.
- Had already attended any relaxation therapy.

Data Collection Procedure

Ethical approval to conduct the study was obtained from the Institutional Ethical Committee of Sharda Hospital. Formal administrative approval was obtained from Medical superintendent of Naveen Hospital, Noida to conduct the final study in the month of June-July 2018.

Tools and Techniques

Development and description of data collection tools

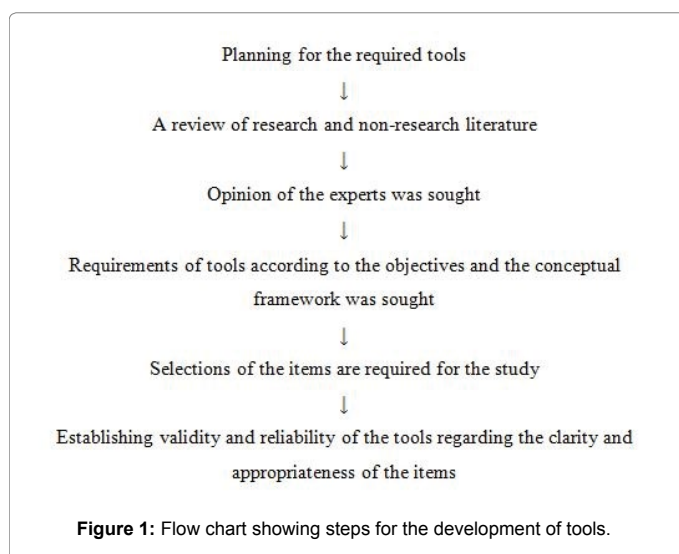
The Figure 1 showing steps for the development of tools for the study which were modified and prepared by undertaking above mentioned steps.

$OA_1OD_1 \times OA_2OD_2$ (Symbolic representation of the research design)

- OA_1 =Is the pre-test of anxiety of COPD patient before the administration of cognitive behavior therapy.
- OD_1 =Is the pre-test of depression of COPD patient before the administration of cognitive behavior therapy.
- \times =Is the structured cognitive behavior therapy administered regarding anxiety & depression.
- OA_2 =Is the post-test of anxiety of COPD patient after administration of cognitive behavior therapy.
- OD_2 =Is the post-test of depression of COPD patient after administration of cognitive behavior therapy.

Selected demographic variables

The Table 1 represents the schematic of research design of the



Group	Day 1	Day 2	Day 20
COPD Patients in selected hospital of Gr. Noida	Pre-test of depression and anxiety of COPD patients	Administration of cognitive behavioral therapy	Post-test of depression and anxiety of COPD patients

Table 1: Schematic representation of research design.

demographic variables.

Cognitive Behavior Therapy (CBT) Programme

After assessment the problem, the intervention package focused on the following

- To motivate the patient for therapy.
- To prepare him to deal with and face phobic situation he avoided due to anxiety.
- To reduce his anxiety.
- To reduce inferiority complex and increase self-esteem.
- To modify his negative thoughts.

The therapeutic package consisted of the following intervention techniques

- Psycho-education
- Jacobson’s progressive muscular relaxation technique
- Systematic desensitization
- Exposure and response prevention technique
- Cognitive restructuring

Result

16.65% of COPD patients were in the age group of 40-50 years followed by 43.33% in age group 50-60, 23.33% in the age group of 60-70 years and 16.67% were in the age group of more than 70 years.

Most of them are the female’s 53.33% and 46.67% males. 20% of the patients are unemployed, 30% are working in private sector and 40% in the government sector and very few less than 10% in the corporate sector. Most of the patients were married (i.e. 90%), Singles were 3.33%, less than 3% were divorced. 30% patients were having monthly family earning of 3000-8000/-. 43.33% with monthly family income 8001-13000/- and 26.67% were having a monthly family income more than 13000/-

Finding revealed 6.67% patients were illiterate, 40% had primary education followed by 43.33% of secondary education, 6% had higher secondary education and 3.3% were graduate and above. More than 55% had a family history of COPD and 43.33% had no history of COPD. More than 70% had previous knowledge regarding COPD and 23.33% had no previous knowledge.

Effectiveness of cognitive behaviour therapy on depression symptoms among COPD patients

In order to determine the significance of the mean difference between pre-test and post-test depression score of COPD patients the following research hypothesis and null hypothesis was stated at 0.001 levels of significance.

H_1 : There will be significant difference in mean pre and post-test depression score of COPD patients.

H₀₁: There will be no significant difference in mean pre and post-test depression score of COPD patients.

The above Table 2 shows that the mean pre-test depression score was 26.6 whereas mean post-test score was 22.8 with a mean difference of 3.7 thus the computed t value was found to be statistically significant (t=4.75, p= 0.001) at 0.001 level of significance. Thus, it was concluded that the difference obtained in the mean pre-test and post-test depression score was a true difference and not by chance. Hence, the null hypothesis (H₀₁) was rejected and research hypothesis (H₁) was accepted.

The data presented in Table 3 revealed that the mean pre-test anxiety score was (17.4) whereas mean post-test anxiety score was (19.7) with a mean difference of (2.2). The computed t value was found to be statistically significant (t=12.6; p=0.001). Thus, it was concluded that the difference obtained in the mean pre-test and post-test anxiety score was a true difference and not by chance. Hence, the null hypothesis (H₀₁) was rejected and research hypothesis (H₁) was accepted. Thus, it can be inferred that CBT was effective in reducing the anxiety of COPD patients.

Correlation between depression and anxiety post-test score of COPD patients

This section describes the correlation between post-test depression and anxiety score in COPD patients and in order to find the significance of the relationship between post-test depression and anxiety score, the following research and null hypothesis were stated at 0.05 levels of significance.

H₁: There will be significant correlation between depression and anxiety scores of COPD patients after implementation of cognitive behaviour therapy.

H₀₂: There will be no significant correlation between depression and anxiety scores of COPD patients after implementation of cognitive behaviour therapy.

The data presented in the Table 4 showed that there was negative correlation between post-test depression and anxiety scores as evidenced by the computed value (-0.18) which was found to be statistically significant at 0.001 level of significance [9,10].

Depression	mean	M _D	SD	SE _{MD}	t-value	p value
Pre-test	22.8	1.7	4.3	0.8	4.75	0.001
Post-test	26.6					
N=30; df=29; *significance (0.001)						

Table 2: Mean, Mean difference, Standard Deviation Difference, Standard Error of mean difference and t-value p value of mean pre-test and post-test depression score of COPD patients.

Depression	mean	M _D	SD _D	SE _{MD}	t-value	p value
Pre-test	17.4	2.2	0.9	0.2	12.6	0.001
Post-test	19.7					
N=30; df=29; *significance (0.001)						

Table 3: Mean, Mean difference, Standard Deviation Difference, Standard Error of mean difference and t-value p value of mean pre-test and post-test anxiety score of COPD patients.

Post-test	Depression score	Anxiety score r (p value)
Depression score	-	-0.18
N=30; *significance (0.001)		

Table 4: Correlation between depression and anxiety post-test score of COPD patients.

Conclusion

The following conclusions were drawn from findings of the study. There was no significant correlation between post-test depression and anxiety. Cognitive behaviour therapy was an effective therapeutic process in reducing anxiety and depression among COPD patients. There was negative correlation between anxiety and depression scores.

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