International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2019): 7.583

A Study to Compare Effectiveness of Cognitive Behavioural Therapy Versus Acceptance and Commitment Therapy on Depression in Patient's with Parkinson Disease

Sunil Neupane

Abstract: ***Background and objectives- This study examined the effects of cognitive behavioural therapy and action & commitment therapy on depression of the Parkinson patient. It examines the combine effect of conventional physiotherapy treatment along with these two approaches for depression in Parkinson patients. Methods- The subjects were 30 inpatient who were randomly divided into two groups; 15 patients in experimental group performed cognitive behavioural therapy (once a week) and received action and commitment therapy (once a week) for 3 months i.e. 12 weeks. The Hamilton rating scale of depression (HAM-d) and beck depression inventory (BDI) were measured before and after the 12 weeks of therapy. Results – Both groups shows significant improvement in depression, after 12 weeks of cognitive behavioural therapy and action and commitment therapy. Progression was measured in HAM-D and BDI scales. Interpretation and conclusion- This study demonstrated that cognitive behavioural therapy and action commitment therapy helps in decrease in depression of Parkinson patients. But there is no significant difference between these two treatments. Key words- Parkinson, depression, cognitive behavioural therapy, action and commitment therapy, BDI, HAM-D.***

Keywords: Parkinson, depression, cognitive behavioural therapy, action and commitment therapy, BDI, HAM-D

1. Introduction

Mental health includes our emotional, psychological, and social well-being. It affects how we think, feel, and act. It also helps determine how we handle stress, relate to others, and make choices. Mental health is the level of psychological well-being or an absence of mental illness. It is the state of someone who is "functioning at a satisfactory level of emotional and behavioural adjustment".[1] From the perspectives of positive psychology or of holism, mental health may include an individual's ability to enjoy life and to create a balance between life activities and efforts to achieve psychological resilience.[2] According to the World Health Organization (WHO), mental health includes "subjective well-being, perceived self-efficacy, autonomy, competence, inter-generational dependence, and self-actualization of one's intellectual and emotional potential, among others".[3]" Mental health problems may arise due to stress, loneliness, depression, anxiety, relationship problems, death of a loved one, suicidal thoughts, grief, addiction, ADHD, self-harm, various mood disorders, or other mental illnesses of varying degrees, as well as learning disabilities.[4,5]

Acceptance and Commitment Therapy (ACT) is an innovative acceptance-based behaviour therapy that has been applied broadly and successfully to treat a variety of clinical problems, including the anxiety disorders. Throughout treatment ACT balances acceptance and mindfulness processes with commitment and behaviour change processes. As applied to anxiety disorders, ACT seeks to undermine excessive struggle with anxiety, depression and experiential avoidance–-attempts to down-regulate and control unwanted private events (thoughts, images, bodily sensations). The goal is to foster more flexible and mindful ways of relating to anxiety and depression so individuals can pursue life goals important to them. This article describes in some detail a unified ACT protocol that can be adapted for use with persons presenting with any of the major anxiety disorders.[6]

Cognitive behavioural therapy (CBT) is a short-term, goal-oriented psychotherapy treatment that takes a hands-on, practical approach to problem-solving. Its goal is to change patterns of thinking or behaviour that are behind people's difficulties, and so change the way they feel. It is used to help treat a wide range of issues in a person's life, from sleeping difficulties or relationship problems, to drug and alcohol abuse or anxiety and depression. CBT works by changing people's attitudes and their behaviour by focusing on the thoughts, images, beliefs and attitudes that are held (a person's cognitive processes) and how these processes relate to the way a person behaves, as a way of dealing with emotional problems.

Cognitive-behavioural therapy is a type of psychotherapy that addresses behaviours and thought patterns that contribute to depression. CBT is a widely researched treatment that has been found to be very effective for treating depression in people without PD, including the elderly [7, 8] and those with other physically disabling disorders [9]. However, there has been little work applying the cognitive-behavioural treatment approach to depression in Parkinson's disease. CBT has demonstrated efficacy for the treatment of depression when used alone [10] or in combination with antidepressant medication [11]. Several comparison studies have also suggested that cognitive and behavioural interventions are as effective as antidepressant medications [12] and may be superior to medication for prevention of relapse of depressive symptoms [13]. A non-medication approach such as CBT may be a particularly useful option for PD patients who can't tolerate (i.e., had uncomfortable side effects), do not wish to take, or have not been sufficiently helped by antidepressant medication.[14]

Licensed Under Creative Commons Attribution CC BY

1.1 Aims and Objectives of the Study

1) To study the effectiveness of cognitive behavioural therapy on the Parkinson's patient with depression.
2) To study the effectiveness of acceptance and commitment therapy on Parkinson's patient with depression.
3) To compare the effectiveness of cognitive behavioural therapy and acceptance and commitment therapy in subjects of Parkinson's patient with depression.

1.2 Hypothesis

Null hypothesis
There is no any difference in effect of cognitive behavioral therapy and acceptance and commitment therapy on depression of Parkinsonism patients.

Research hypothesis
There will be difference in effects of cognitive behavioral therapy and acceptance and commitment therapy on depression of Parkinson's pt.

Research Question
Which treatment is more effective in depression of Parkinson's patient?
How much effective are action commitment therapy and cognitive behavioural therapy?

2. Materials and Methods

Study Design

Comparative study design with two group- group A and group B.

Methodology

Study Population
Subject Parkinson's patient with depression and anxiety.

Sample size

The study will be carried on total of 30 (n=30) subjects.
15 subjects in cognitive behavioural therapy along with generalize physiotherapy treatment.

15 subjects in action commitment therapy with generalized physiotherapy treatment.

Sampling Method
Simple Random Sampling.

Study Duration
1 session per week for 12 weeks.

Sample Selection:

Inclusion Criteria
- Age group between 50 and 90.
- Both male and female subjects.
- Patient with depression in Parkinson's disease.

Exclusion Criteria

- Patient with Parkinson's disease but without any depression and anxiety symptoms.
- Any other Neurological or rheumatic disorders.
- Skin Allergy or rashes.
- Patient with accident and death history in his family members within 6 month.

3. Procedure

Randomization into group
All the subjects who fulfil the inclusion criteria were assigned to two groups based on simple random sampling. The subjects were randomly allocated into two groups of 15 each. Thirty pieces of paper were used; in fifteen papers written with the letter "CBT" to identify the subjects to take into cognitive behavioural therapy group and the other fifteen with the letter "ACT" to identify the subjects to take into action and commitment therapy group. All the thirty pieces of paper were tightly folded and placed in a box. 15 subjects with the letter "CBT" will be enlisted under cognitive behavioural therapy group and the other 15 subjects fifteen with the letter "ACT" under action and commitment therapy group. Complete explanations were given to both the groups separately but the subjects were unaware to which group they belonged. Once the subject agrees to participate in the study, an informed written consent (Annexure-1) was taken from the subjects.

Subjects were blinded on either type of intervention and to which group they were belonged. Throughout the treatment sessions, subjects from both the groups were not allowed to have any interaction to each other and the subjects were not aware of what kind of treatment they received and its effects.

4. Outcome Measures

Although many clinical assessment methods are developed for the study of depression, we select the most effective way to measure the severity of depression. We selected two main outcome measure to measure the depression of the subjects in this study which tends to be the most effective for Parkinson related depression. For measurement of severity of depressive symptoms, the Ham-D, MADRS, BDI, and SDS scales are recommended.[30]

One Class I and two Class II articles compared the accuracy of depression screening tools to an independent reference standard based upon DSM criteria.[31, 32] these studies reported results of the Beck Depression Inventory (BDI), 11 which is a self-completion questionnaire (21 items, range 0 – 63), the Hamilton Depression Rating Scale (HDRS-17) (17 items, range 0 –52) [31, 32, 33]

1. Hamilton Rating Scale for Depression (HAM-D)
The HDRS (also known as the Ham-D) is the most widely used clinician-administered depression assessment scale. The original version contains 17 items (HDRS17) pertaining to symptoms of depression experienced over the past week.[34]

Licensed Under Creative Commons Attribution CC BY

Although the HAM-D form lists 21 items, the scoring is based on the first 17. It generally takes 15-20 minutes to complete the interview and score the results. Eight items are scored on a 5-point scale, ranging from 0 = not present to 4 = severe. Nine are scored from 0-2.
Sensitivity: 86.4%
Specificity: 92.2% [35]

2. Beak's depression inventory (BDI)
The Beck Depression Inventory (BDI) is a 21-item, self-rated scale that evaluates key symptoms of depression including mood, pessimism, sense of failure, self-dissatisfaction, guilt, punishment, self-dislike, self-accusation, suicidal ideas, crying, irritability, social withdrawal, indecisiveness, body image change, work difficulty, insomnia, fatigability, loss of appetite, weight loss, somatic preoccupation, and loss of libido. Individual scale items are scored on a 4-point continuum (0=least, 3=most), with a total summed score range of 0–63. Higher scores indicate greater depressive severity. (Beck & Steer, 1993; Beck, Steer & Garbing, 1988).

Estimates of internal consistency for the full-scale and short-form BDI have been acceptable in both normal and depressed older adults. [36]

5. Data Analysis

Statistical analysis
Statistical analysis will be performed by using SPSS software for window and p value will be set as 0.005.Descriptive statistics will be used to analyze the baseline data for demographic data. Paired and unpaired student t test will be used to find significance of parameters.

6. Discussion

In the present study, an experimental study design of 30 subjects with depression on Parkinson disease were randomized into two groups; group A (N=15) and group B (N=15). Subjects in group A received cognitive behavioural therapy and subjects in group B action and commitment therapy.

Both groups received treatment for 3 months, 1 session per week to enhance the depression of these Parkinson patients. Outcome measurement of ham-d and BDI were taken for each subject of the group for pre and post study.

The results of the present study accept null hypothesis i.e. there is no significant difference between two groups. The results of the current study showed significant improvement in both groups but show there is no significant difference between the both treatments on the improvement of depression on those Parkinson patients with respect to ham-d and BDI scales.

Individuals with Parkinson in our study were found to have problems with depression and other psychological effects of disease. These problems can occurred due to the parts of brain affected by the Parkinson disease pathology. Every case of Parkinson are different and the effects will depend on which part of brain is more effected and which type of Parkinson the patient is facing as well as for how long period of time, as duration of disease affecting the patient is also important.

Many problems are seen and faced by the patient when he/she suffer from this one of the important neurological disorders which is affecting millions of people. Positive symptoms in Parkinson disease (PD) vary across its course. Early in the disease, symptoms experienced include passage hallucinations (where a person, animal or indefinite object is seen briefly passing in the peripheral visual field), illusions (for Example, seeing the branch of a tree as a cat), and presence hallucinations (a feeling that someone is nearby).Pareidolia refers to a specific class of illusion where faces and Objects are seen in formless visual stimuli, such as clouds, flames or tree bark, or in Geometric visual patterns, such as carpets or wallpaper. This type of illusion can occur as A normal perceptual experience, but is increased in frequency in PD and related Disorders such as dementia with Lewy bodies.

Depression is known to have a major impact on the prognosis of PD: depressed PD patients score lower on scales assessing motor function and activities of daily living (ADL), exhibit more cognitive symptoms, and report a lower quality of life.

Different pain, stiffness, rigidity, difficulty in walking etc. are generally caused because brain doesn't produce dopamine which is very responsible for these movement related work in our body.

This study examined the effect of cognitive behavioural therapy and action commitment therapy on the patients with Parkinson for the depression and psychological issues. It is suggested a proper approach for improving depression after Parkinson.

In this study BDI and HAM-D scales was used to evaluate the anxiety and depression. After the experiment, there was no significant difference in depression between two groups. But both groups show the improvement of depression after therapy. The increase in these outcome measures was slightly larger in cognitive behavioural therapy group. But overall report to be same. Therefore both CBT and ACT were effective at improving the ability of trunk control.

The present study examined the relationships between cognitive behavioural therapy on depression & action and commitment therapy on depression. In both study there was some different between groups but not significant. This is because both treatment approaches helps patient to relief from major symptoms of depression.

The two groups' shows significant post-intervention improvement in depression but there was no significant difference between the groups. Both groups showed a significant improvement in depression between pre and post-intervention.

The depression assessment of BDI and HAM-D consist of many innovatory on basis of sleep, anxiety, sadness, fear and other different psychological aspects of evaluation. In

Licensed Under Creative Commons Attribution CC BY

these both outcome measures, there were significant improvements in both groups, and the change in the cognitive behavioural therapy group was significantly larger than that in the action and commitment group.

The pre-test scores of BDI was 22.73±4.06 in group-A and 21.47±4.92in group-B, which was more are less same and it not significant (p>0.05). Similarly, the pre-test mean and SD of HAM-D scores was 14.53±2.92 in group-A and 16.33±4.10 in group B were not statistically significant (p>0.05). It evidenced that initially before the intervention the patients with Parkinson's disease were similar in BDI and HAM-D in both the groups.

But, while comparison of post-test scores of BDI, the mean and SD was 16.87± 3.39 in group-A, which was little less than the post-test mean and SD of BD I scores of 18.13± 3.92 in group-B. The non-parametric test for independent outcomes when the scores were ordinal, Mann-Whitney U test was worked out and it was found to be statistically not significant (i.e.>0.05). Similarly, post-test scores of HAM-D scores the mean and SD was 9.87±1.92 in group-A, which was similar the post-test mean and SD of HAM-D 10.93±2.25 in group-B. The non-parametric test for independent outcomes when the scores were ordinal, Mann-Whitney U test was worked out and it was found to be statistically not significant (i.e. p>0.05).

So we can say that intervention of cognitive behavioral therapy and action and commitment therapy to be individually effective in treating patients with depression. Both groups shows almost equal improvement although was different treatment approach.

It seems that muscle stretching and other regular and conventional treatment of the patients also helps in improving the physical symptoms of the patient. Although our aim was to measure the psychological aspects of the disease, these regular exercises and conventional treatment protocol also helps in patient improvement in both physical and psychological aspects. The regular treatment also should be specialized and according to the condition of the patient it should be applied. For e.g. patients with hamstring tightness was given hamstring stretching and with their muscle tightness accordingly stretching was given.

In addition, given the heterogeneous nature of our results, we consider that research should be oriented towards ideal training models, taking into consideration the number of session required for maximum benefit to the patient.it would also be interesting to determine how long the effects last after intervention, since the analysis of single study on this aspects did not enable robust conclusions. We consider it is essential tp pursue research in order to draw up recommendations from the follow-up of depression patient of Parkinson, in the form of therapeutic guide.

Both CBT as well ACT therapies are one to one based treatment approach. Both are objective way of treating the problems faced by the patient. Right time and environment also play roles in the effectiveness of this therapy. Physical contacts are rarely needed for the treatment. The educational and literacy also plays important role in effectiveness of the treatment because it requires the proper understanding of what therapist wants to convey the information to the patient.

7. Conclusion

The present study concludes hat the intervention of cognitive behavioural therapy in group A and action commitment therapy in group B were found to be individually effective on increasing HAM-D and BDI among the Parkinson patients. But there is no significant difference in effectiveness of both treatment methods on depression of Parkinson patient.

8. Summary

An experimental study design of 30 subjects with stroke was randomized into two groups: group A (n=15) and group B (n=15). Subjects in group a received cognitive behavioural therapy and subjects in group B received action commitment therapy for three months, 1 session per week. The base line data of HAM-D and BDI was obtained to check the balance. Outcome measurement of HAM-D and BDI was taken for each subject of the group's pre and post study.

The mean values of outcome measures were analysed within both group and between both the groups via paired t test as test of statistics. The outcome measure of HAM-D and BDI were found to be statistically significant in both groups.

Hence based on above results of the present study it can be concluded that both cognitive behavioural therapy and action commitment therapy improves the depression on Parkinson patients. So both treatment approaches can be taken as reliable treatment approach for the depression in Parkinson patients.

List of Abbreviations Used

CBT- cognitive and behavioural therapy
ACT- action and commitment therapy
HAM-D-Hamilton Depression Rating Scale
BDI-Beck's Depression Inventory
IDS-Inventory of Depressive Symptomatology
DPD- depression in parkinsion disease
CES-D- centre for epidemiologic studies-depression
CSDD- Cornell scale for depression in dementia
DSM-IV- diagnostic and stastical manual of mental disorders-iv
MADRS- montgometry asberg depression rating scale
SDS- sheehan disability scale
GAD- generalized anxiety disorder

References

[1] Friedman, Howard S. Encyclopaedia of mental health. Academic Press, 2015.
[2] Lopez, Shane J., Jennifer Teramoto Pedrotti, and Charles Richard Snyder. Positive psychology: The scientific and practical explorations of human strengths. Sage Publications, 2018.
[3] Allen, Jessica, et al. "Social determinants of mental health." International review of psychiatry 26.4 (2014): 392-407.

Licensed Under Creative Commons Attribution CC BY

[4] Kessler, Ronald C., et al. "The epidemiology of major depressive disorder: results from the National Comorbidity Survey Replication (NCS-R)." Jama 289.23 (2003): 3095-3105.
[5] Kitchener, Betty Ann, Anthony F. Jorm, and Dr Claire Kelly. Mental health first aid manual. Canberra: Centre for Mental Health Research, The Australian National University, 2002.
[6] Eifert, Georg H., et al. "Acceptance and commitment therapy for anxiety disorders: Three case studies exemplifying a unified treatment protocol." Cognitive and Behavioural Practice 16.4 (2009): 368-385.
[7] Litvan, Irene, et al. "Movement Disorders Society Scientific Issues Committee report: SIC Task Force appraisal of clinical diagnostic criteria for parkinsonian disorders." Movement disorders: official journal of the Movement Disorder Society 18.5 (2003): 467-486.
[8] Huse, Daniel M., et al. "Burden of illness in Parkinson's disease." Movement disorders: official journal of the Movement Disorder Society 20.11 (2005): 1449-1454.
[9] Chaudhuri, K. Ray, and Anthony HV Schapira. "Non-motor symptoms of Parkinson's disease: dopaminergic pathophysiology and treatment." The Lancet Neurology 8.5 (2009): 464-474.
[10] Reijnders, Jennifer SAM, et al. "A systematic review of prevalence studies of depression in Parkinson's disease." Movement Disorders 23.2 (2008): 183-189.
[11] Pankratz, Nathan, et al. "Clinical correlates of depressive symptoms in familial Parkinson's disease." Movement disorders: official journal of the Movement Disorder Society 23.15 (2008): 2216-2223.
[12] Berto, Patrizia, et al. "Depression: cost-of-illness studies in the international literature, a review." The journal of mental health policy and economics 3.1 (2000): 3-10.

Licensed Under Creative Commons Attribution CC BY