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QUASI EXPERIMENTAL ANALYSIS OF MINDFULNESS-BASED COGNITIVELY THERAPEUTICS' EFFICACY

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Abstract. In this paper, the whole study deals with Quasi experimental analysis of mindfulness-based cognitively therapeutics' efficacy for reducing rumination and measure of self-compassion in patients with severe treatment-resistant depressive symptoms. It is an empirical study to reach out to the results and the findings suggest that mindful based therapy significantly lower depression and ruminative thinking considerably within the experimental group and also enhanced intermediaries, such as attention and compassion. In a one-month follow-up time frame, patients maintained improvements. The present investigation contributed much farther evidence supporting the efficacy of Mindfulness based Cognitive behavior therapy for Treatment resistant depression.

1. INTRODUCTION

Mindfulness-based psychotherapy has been shown to lessen introspection in both remitted and presently despondent participants. Even so, few have known about the potential of Mindfulness-based psychotherapy on introspection in severely depressed and treatment-resistant patients. Questionnaires are frequently used to evaluate introspection, however this establishes the uncertainty of assessment and recollect prejudices. A comprehensive review signifies including behavioural measures as well. The breathing focus process is a behavioural measure which has originally been used to evaluate introspection in dysphonic students. The analysis revealed that it was satisfactory to these participants and that it improved depression symptoms (pre-post Effect Size=0.98), with a substantial percentage of patients getting back to normal or near-normal emotional patterns.

2. METHOD

Patients with treatment-resistant depression decided to participate in the current investigation, which was a pseudo investigation. Purposive sampling was used to select the appropriate participants, who were then allocated to one of two different groups: experimental and control. The experimental group was given MBCT together along with antidepressants, while the control group was given only psychiatric drugs. The Hamilton and Beck Depression

Assessment, as well as the Consciousness Scale, Thought Rumination Scale, and Mindfulness Scale, were used in the analysis. The treatment regimen consists of 8 sessions, with a one-month follow-up period after the therapy ended. Descriptive statistical analysis (Average and standard deviation) and inferential analysis (variance analysis (anova) for repeated measures and Bonferroni's post-hoc analysis) were used to evaluate quantitative data. Depression has an intense psychological, interpersonal, and financial impact on patients, their relationships, and social system, with 12-month prevalence and incidence ranging from 2.9 to 12.6% and lifetime risk ranging from 17 to 19%. (Kessler et al., 1994). The reality that melancholy is frequently a major depressive disorder, with treatment outcomes of 50–80% among those who have previously been distressed, has led to WHO's estimate that melancholy will be the worlds largest second most common cause of ill-health consequence by 2020 (Murray et. al, 2010, Williams, Crane, Barnhofer, van der Does & Segal, 2006; Keller, Lavori, Lewis, & Klerman, 1982; Powell et. al, 2019; Beautrais et al., 1996).

Furthermore, depression has yet another characteristic that is serious concern: the emergence of a protracted clinical course that is resistant to treatment. Patients in these circumstances express persistent depressive symptoms as well as concern over these symptoms. 1 year following symptom start, 15–39% of patients still satisfy requirements for Major Depressive Disorder (MDD), and 22% of cases may continue to do so up to 2 years later. The danger of suicide behavior in such people is particularly concerning. What causes people to be depressed? Responses from Nolen-Hoeksema (Nolen-Hoeksema, 2008), according to Styles Theory , people who engage in recurrent thoughts about their depressive symptoms likely to perpetuate the symptoms they are seeking to alleviate. Ruminators frequently maintain the optimistic (but incorrect) assumption that it will help, without recognizing that they are limiting their ability to handle problems successfully. Finding illustrates that the cognitive processes that make people more vulnerable to future episodes are the same ones that keep them depressed. Through constant attempts of purposefully attempting to return awareness to a neutral object (for example, the breath or bodily signals) in the current moment, MBCT advancements made to monitor their thoughts and emotions. Participants learn how to develop direct experience awareness as well as an unconditional positive regard accepting attitude regarding whatever is in front of them (Depressing emotions, for example, is prone to generate patterns of generalized negative self-referent perception in pateints with depressive symptoms.). Patients can observe when unpleasant and ruminative responses are being induced more explicitly when they acquire consciousness during mindfulness practice, and they can deviate from such tendencies.

Without a doubt, mindfulness has been the most rapidly spreading and popular concept in psychotherapy over the last two decades. It has a greater impact than any other individual concept or framework in modern psychotherapy. Nevertheless, there are numerous existential questions, unstructured interviews, and on controversies associated with this accelerated, almost fanatical spread, which evidently penalizes for a complete absence in modern centric communities. Analogously, we are experiencing a lack of contemplation, as well as a system of immense idealized version and the peruse for a natural remedy. All of this flows from colonialism and is bound to take over ideologies, research methodologies, and all the accompanying significant adverse: profit, consciousness, professional ethics, blank commitments of instant reward, and so on. Our article will examine the evolution of significance in mindfulness in psychotherapy, and even some scientific studies and challenges, as well as conceptual frameworks and methodologies for using mindfulness in psychotherapy. Implicit interpretations of some latent need in society also point out the dearth of reflective thinking, the quest for panacea and a methodology of enormous ideology (Watkins, 2008; Watkins et. al, 2011; Dimidjian, & Segal, 2015; Jacobson, Martell & Dimidjian, 2001; Nolen-Hoeksema, 1991, 2000; Teasdale, Chaskalson, 2011, Kolovos et. al. 2016; Tsang, 2018, Foroughi, et. al, 2020.)

As mentioned above, therefore, evaluation has been implemented in a broad and increasing spectrum of areas. All of these aspects of consciousness, however, are colonial and apparently have no detailed understanding of primary data but have taken on ideologies, methods and techniques.

3. METHODOLOGY

Exploratory design (pre-test, post-test, and follow-up) with control and experimental groups is the research methodology. Patients with TRD included in the experiment. The appropriate sample size was determined using the frequency distributions reported in previous literature. A purposive sample strategy was used to choose 66 participants who were then assigned randomly to experimental or control classes. A database of all participants was first compiled, after which identities were selected at random from a bowl. The experimental class was assigned the very first name selected, followed by the control class, and so forth for all participants.

4. PROCEDURE

The experimental group was given MBCT as well as pharmaceuticals, while the control group was given simply antipsychotics. Every one of the participants that participated in the MBCT sessions were outpatients. The pharmaceutical regimen was as follows: patients were given a

60 mg citalopram dose for four to six weeks at first. They were given Sertraline at a maximal dose of 200 mg for four to six weeks leading to a shortage of response throughout this time. Bupropion was also administered in addition to sertraline. Antidepressant drugs were given at the right doses and for the right amount of time, but still no response to treatment was seen, therefore these patients were identified having TRD. The MBCT was decided to carry out by a Virtuoso of Clinical Psychology, who had received training in this field, and all treatment sessions were supervised by the supervisor. Major depressive disorder was the inclusion criterion, which was assessed by psychiatrists and a clinical psychologist based on organized clinical interviews. Explanatory variables included: a lack of treatment intervention to appropriate amounts of two antidepressants for a specified duration (18 weeks); a moderate incidence of depression (score 17 or above) on the Beck Depression Inventory – 2nd Edition; min and max ages of 18 and 45 years old, correspondingly; the minimal educational attainment needed to complete the list of questions; and, lastly, the patient's conscientiousness. Criteria for exclusion included the dearth of suicidal ideation and psychiatric disorders as well as acute mental illness stages (e.g. pathological psyches and symptomatology, bipolar, co-morbid psychotic disorders, panic complications, post-traumatic stress - related disorders, seasonal or depressive abnormalities due to substance misuse or psychiatric disability).

4.1.Considerations of ethics

The experiment was carried out in compliance with my guide and is seeking approval by University. By signing the consent form, participants agreed to partake in the research.

4.2. Analytical statistics

Questionnaires were tabulated, entered into the Statistical Package for social Sciences Sciences (SPSS), variant 18, and analyzed using descriptive and inferential statistics (mean and standard deviation and mixed analysis of variance for repeated measures). It's worth noting that the information analysis was conducted in an unbiased approach.

5. TOOLS

5.1. SCID-DSM-IV (Abnormalities Standardized Psychiatric Assessment)

A psychiatric practitioner who is knowledgeable with psychological health and safety standards and objectives administers this semi-structured interview guide. For present diagnoses, the kappa value was 1.65, and for lifetime diagnoses, the overall weighted kappa was 1.43 for current diagnoses and 1.5125 for lifetime diagnoses.

5.2. 2nd Edition of the Beck Depression Inventory (BDI-II)

The BDI is a 21-item actualization questionnaire that assesses depression's cognitive, psychological, physiological, and vegetative characteristics.

The BDI-II has a high one-week test retest reliability (alpha coefficient = 2.5025) and is favorably connected with the Hamilton depression rating measure (r = 1.9525), with satisfactory correlation.

5.3.The Hamilton Depression Rating Scale (HDRS) is a tool for assessing depression.

The HDRS is by far the most extensively utilized depressive assessment scale delivered by a doctor. Internal reliability coefficients of 2.335 for this with the 17-item HDRS and 2.42 for the 24-item HDRS have been reported in recent research. The psychological features of the HDRS were recently investigated in depth in a research. Researchers examined at 70 experiments and discovered that the majority of HDRS items had a high level of dependability. The HDRS has been found to be reliable, with a generalized measure of depression severity durability ranging from 0.65 to 0.91.

5.4. Short Form Self-Compassion Scale (SCS-SF)

The SCS-SF has 12 items, and results are determined as to how frequently a person responds to emotions of inadequacies or hardship with consciousness, self-judgment, awareness, alienation, basic values, and over-identification. The shortened version has a strong agreement (r = 97.2%) with the extended measure, with a 2.5825 percent retest accuracy. In samples, this test's credibility revealed statistically significant negative relationships with perfectionism (0.9075), negative impact influence (1.045), and outward guilt (0.5775). Interestingly, the Cronbach ’s alpha value for the entire data set was 0.86, with coefficients of 1.87, 1.9525, and 2.365 for the sub-scales of "consciousness vs. actualization," "basic valued vs. alienation," and "awareness vs. over-identification."

5.5. Scale of Ruminative Response

The RRS is a 22-item questionnaire that assesses individual reactions to depression. The scale's two factors have acceptable confirmability. RRS stats associated with BDI, State-Trait Anxiety Scale, and 36-Item Short Form Health Survey score, according to additional empirical evaluation (SF-36). The HDRS has been found to be reliable, with a generalized measure of despair severity durability ranging from 1.7875 to 2.5025.

5.6. Short Form Self-Compassion Scale (SCS-SF)

The SCS-SF has 12 items, and results are determined as to how frequently a person responds to emotions of inadequacies or hardship with consciousness, actualization, awareness, alienation, basic values, and over-identification. The shortened version has a strong agreement

(r = 97.2%) with the extended measure, with a 1.27 percent retest accuracy. In groups, this test's credibility revealed statistically significant negative relationships with perfectionism (0.9075), negative impact influence (09835), and outward guilt (0.5775). Additionally, the Cronbach's alpha coefficient for the entire scale was 0.86, with coefficients of 0.978, 0.9802, and 0.9986 for the sub-scales of "actualization vs. self-consciousness," "basic humanity vs. alienation," and "awareness vs. over-identification."

5.7. Questionnaire on Mindfulness in Southampton (SMQ)

The SMQ is a 16-item questionnaire that assesses conscious awareness of painful thoughts and imagery (responding mindfully to unpleasant thoughts and images). The normal population's Cronbach's alpha coefficient was 0.97, while the clinical group's was 0.91. The SMQ was validated and found to have a positive and substantial connection with the Mindful Attention Awareness Scale (MAAS). Confirmatory factor analysis revealed three factors for the Persian version of the SMQ (comparative fit index [CFI] = 0.912; normed fit index [NFI] = 0.83; root mean square error of approximation [RMSEA] = 0.0796). The SMQ displayed strong convergence with consciousness (0.79) and psychological wellbeing (0.61), as well as high discriminant validity when compared to detrimental impact (-0.48), depressive scale (-0.51), anxiousness (-0.41), and tension (-0.68).

Fig. 3. Methodology for statistical analysis

Table 1 - Mindfulness based psychotherapy aspects and information

Discussion	Aspects	Implementation at home
Orientation course	Describing the rationalization for mindfullness based psychotherapy in context of a person's personality and perceptions for participating mindfullness based psychotherapy.	
Discussion - 1	The phrase "fully automated pilot" is introduced, as well as how it makes a significant contribution to depressive episodes. Paying attention to direct personal experience via the sensory receptors as well as the body.	Body scan, mindfulness of breathing, pleasant events and mindfulness of regular activity.
Discussion -	Mode of doing and being. Being aware of	Conscious movement,

2	undesirable, pleasurable, and impartial perspectives while using the body to focus on the present	breath and stretch. Ordinary spaces to breathe.pleasurable happenings and regular activities'
Discussion - 3	Keeping the current perspective in mind. Using one's respiration and body as an anchor to maintain a presence in the immediate situation	Conscious progressing, stretching and breathing. Ordinary spaces to inhale.
Discussion - 4	Depression is associated with repetitive responses to an unfortunate incident. Remaining present throughout the face of expertise.	Inhaling space in mindfulness.
Discussion - 5	There is no need for things to be distinctive than they really are. Embracing expertise, pertaining to it in a particular perspective. Selection and response	Encounter and function properly with breathing spaces in complexities.
Discussion - 6	Observing emotions as a product of the conscious mind. Thought processes are not the same as factual information. making reference to assumed in a different context	Choice of directed respiratory spaces strategies.
Discussion - 7	Taking responsibility for one ’s actions when one's demeanour is significantly low, replying to one's own structure of advance warning symptoms of distress, and behaving appropriately and expertly	Sitting meditation, respiratory, evolving a course of action using a worksheet "Continuing to work with intellect and depressive symptoms"
Discussion - 8	Evaluating and observing on one's studying. I promise to continue practicing mindfulness.	
Continuation	Encouraging people to practice mindfulness	

	on a regular basis, share their stories, and gain knowledge from each other as well.	

Table 2 - Comparative analysis among the research group of demographic trends

	Experimental class		**Control class**	
	frequency	**(%)**	**frequency**	**(%)**
Female	5	65.6	6	75.7
Male	4	34.4	3	24.3
Educational standards				
Lower (schooling)			10.2	1
Medium (Senior secondary)	10.0	1	10.1	2
Higher (Graduation)	21.1	3	68.6	2
Diploma	65.6	5	21.1	1
State of Marriage				
single/widowed	approximately 45	4	66.6	6
Married/cohabitating	approximately 45	4	33.3	3
Divorced	approximately 10	1	0	0
Age				
18-25	approximately 20	2	approximately 22.5	2
26-32	approximately 35	3	approximately 22.5	2

>32	approximately 45	4	approximately 55	5

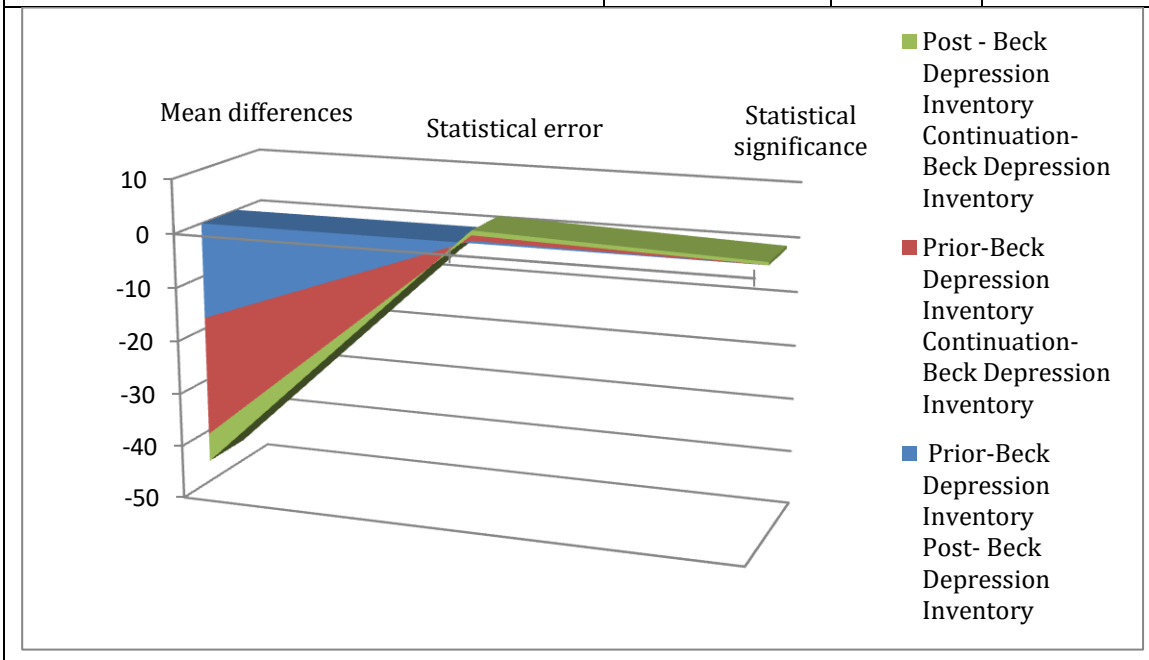
Table 3 - Varying descriptive and inferential statistics

	Continuation	**After the test**	**Prior the test**
Depressive disorder (Beck Depression Inventory-self-report rating inventory that measures characteristic attitudes and symptoms of depression)/groups			
Experimental class	6.01∓1.83	5.01∓0.73	32.68∓8..31
Control class	22.66∓6.17	26.56∓1.83	28.25∓6.23
Depressive disorder (HRDS (Hamilton Depression Rating Scale) is the most widely used clinician-administered depression assessment scale)/groups			
Experimental class	3.35∓0.96	5.01∓0.28	19.65∓2.84
Control class	16.01∓1.02	16.21∓0.84	15.26∓2.18
Group ruminative response			
Experimental class	33.38 ± 4.97	37.02 ± 4.97	59.64± 9.81
Control class	55.1 ± 1.02	56.23 ± 0.98	67.24 ± 2.12
Conscience/group			
Experimental class	46.65 ±2.82	42.12 ± 1.58	26.18± 1.67
Control class	19.72 ± 1.21	21.28 ± 0.26	24.02 ± 1.92
Awareness(mindfulness)/group			
Experimental class	71.78 ±2.25	56.65 ± 1.94	29.46± 11.54
Control class	18.32 ± 4.16	22.62 ± 2.12	19.91 ± 6.14

Table 4 Variable assessment utilizing Bonferroni comparative analysis

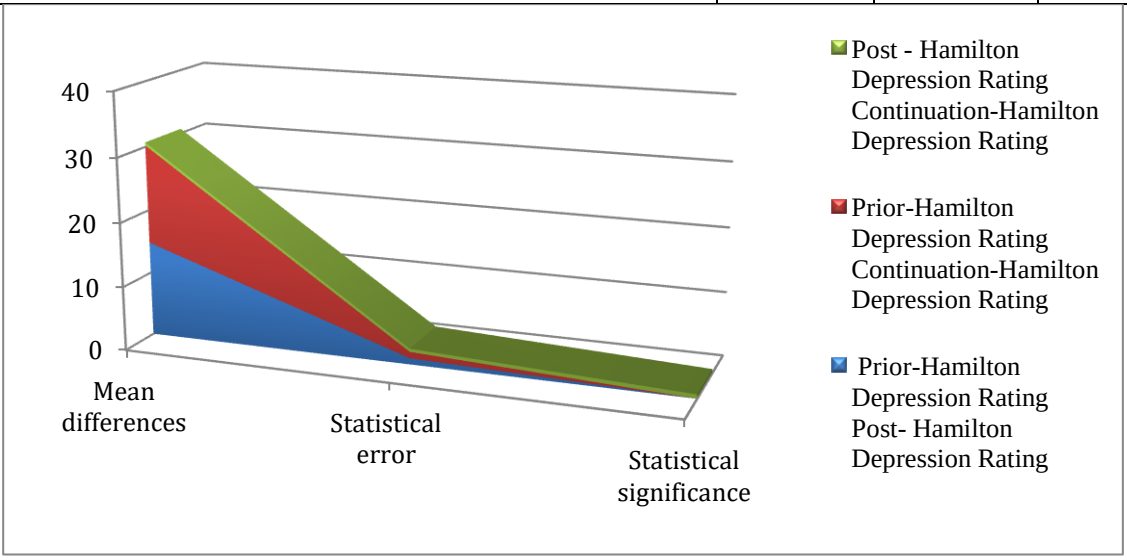
Experiment class

Dependent variable / Elements of Beck	Mean differences	Statistical error	Statistical significance
Depressive Disorder-Beck Depression Inventory			
Prior-Beck Depression Inventory **Post- Beck Depression Inventory**	25.46	2.22	0.003
Prior-Beck Depression Inventory **Continuation-Beck Depression Inventory**	24.89	1.85	0.003
Post - Beck Depression Inventory **Continuation-Beck Depression Inventory**	-1.24	0.62	0.64

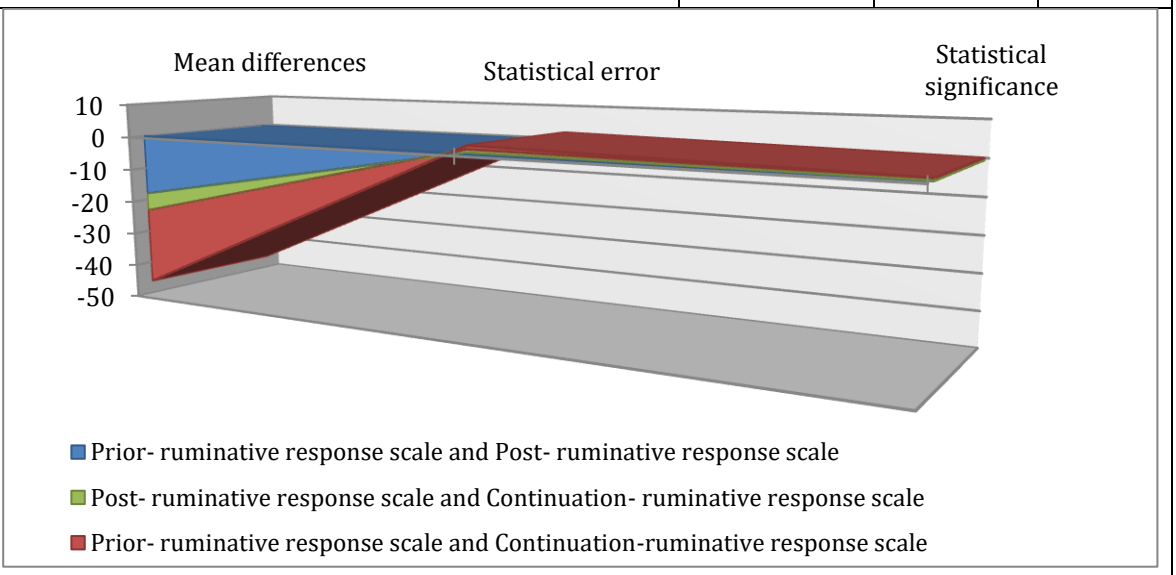


Prior- Hamilton Depression Rating Scale **Post-Hamilton Depression Rating Scale**	14.86	0.96	0.003
Prior- Hamilton Depression Rating Scale **Continuation- Hamilton Depression Rating Scale**	15.36	1.01	0.003

Post- Hamilton Depression Rating Scale **Continuation- Hamilton Depression Rating Scale**	0.48	0.48	0.64

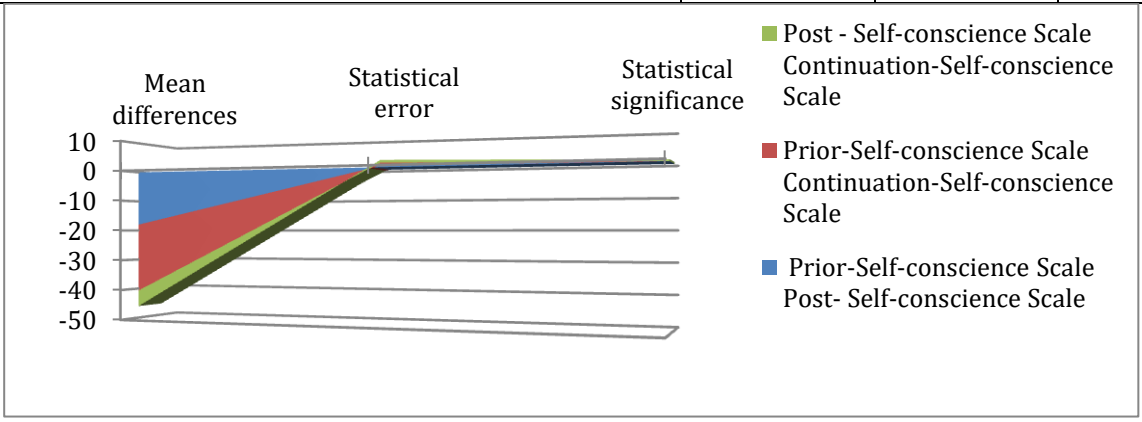


Group ruminative response			
Prior- ruminative response scale **Post-ruminative response scale**	23.21	1.64	0.001
Prior- ruminative response scale **Continuation- ruminative response scale**	26.87	2.92	0.001
Post- ruminative response scale **Continuation- ruminative response scale**	2.54	1.86	0.58



Self-conscience/group

Prior- Self-conscience Scale **Post-Self-conscience Scale**	-18	0.46	0.001
Prior- Self-conscience Scale **Continuation- Self-conscience Scale**	-22.68	0.98	0.001
Post- Self-conscience Scale **Continuation- Self-conscience Scale**	-5.36	0.89	0.56



Awareness(mindfulness)/group			
Prior- mindfulness questionnaire **Post-mindfulness questionnaire**	-29	4.48	0.003
Prior- mindfulness questionnaire **Continuation-Beck Depression Inventory**	-42.78	3.92	0.003
Post- mindfulness questionnaire **Continuation-Beck Depression Inventory**	-14.92	1.86	1.96

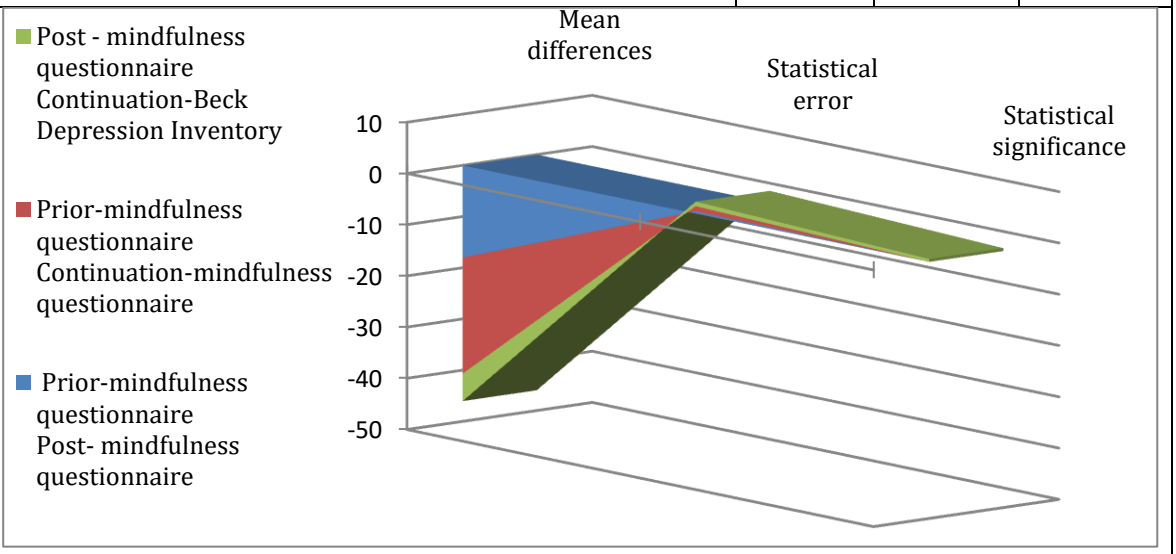
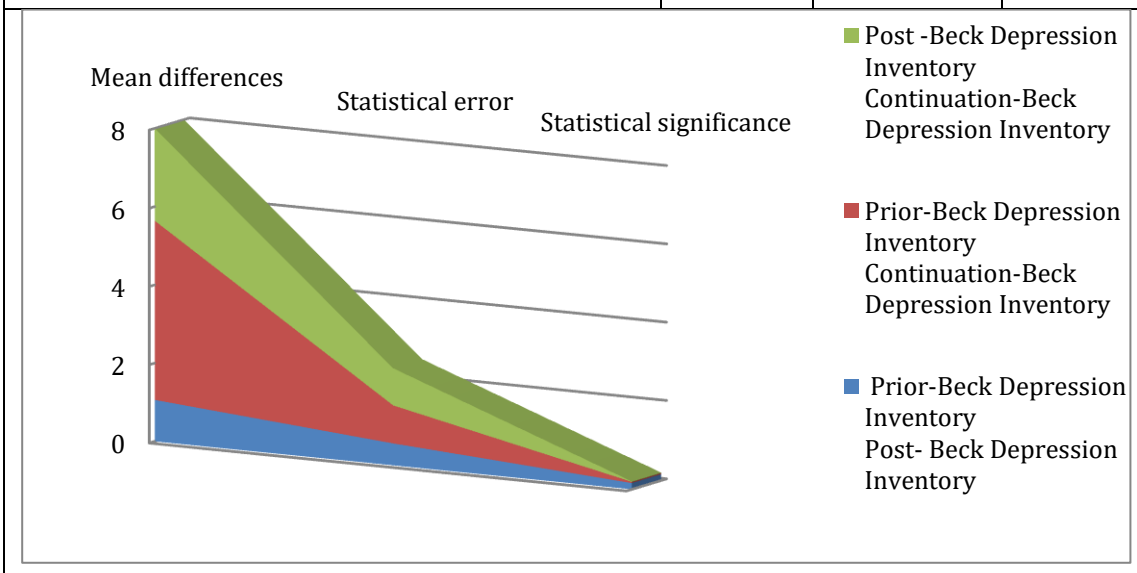
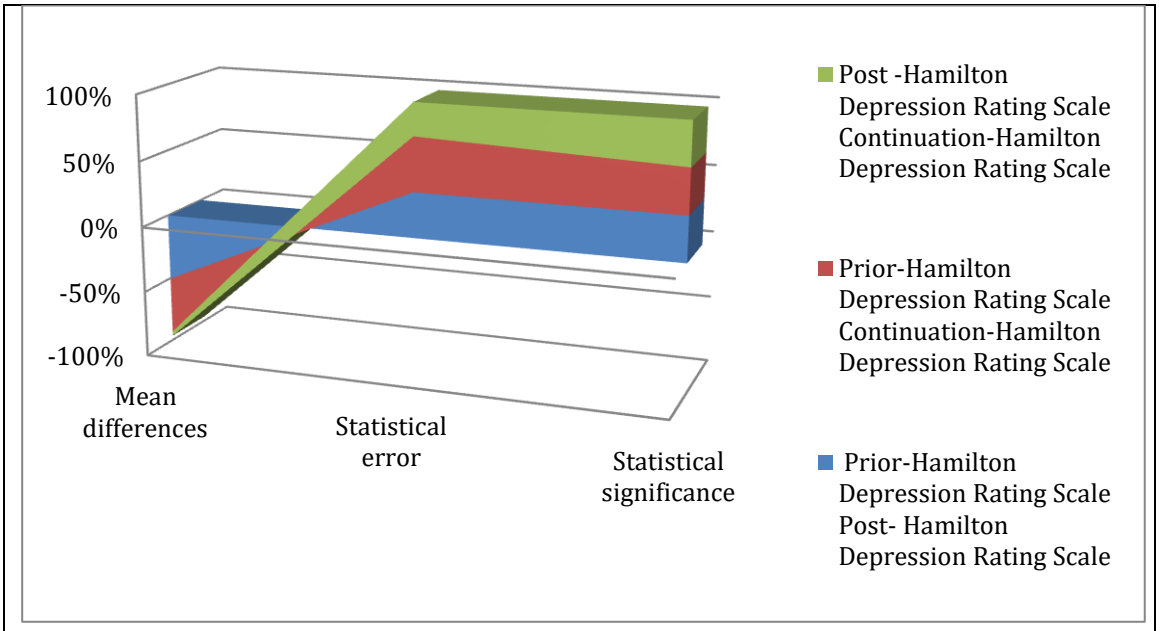


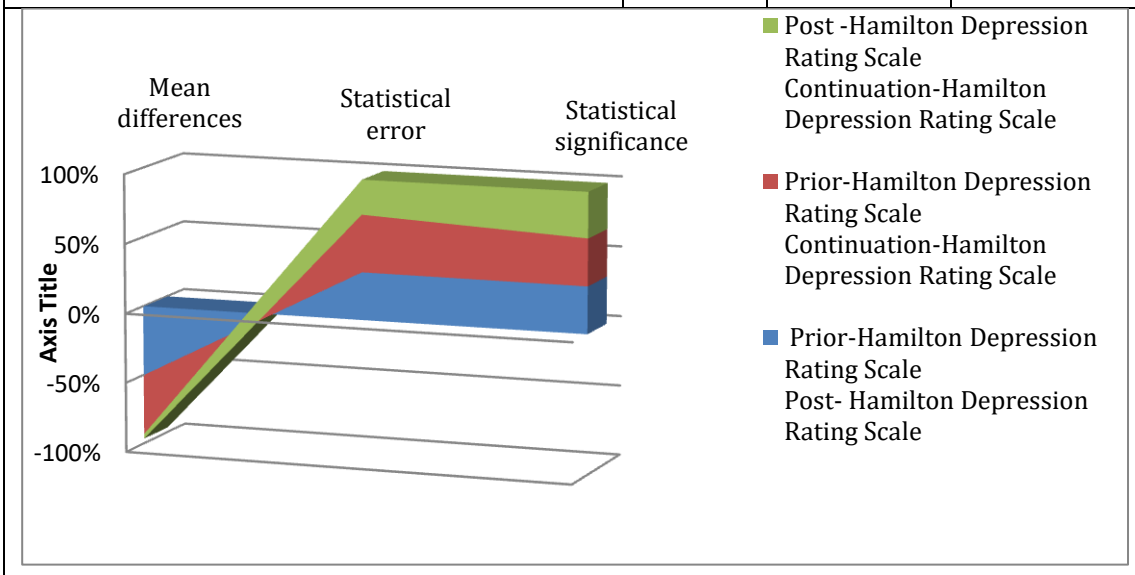
Table 6 - Variable assessment utilizing Bonferroni comparative analysis			
Control class			
Dependent variable / Elements of Beck	**Mean differences**	**Statistical error**	**Statistical significance**
Depressive Disorder-Beck Depression Inventory			
Prior-Beck Depression Inventory **Post- Beck Depression Inventory**	1.06	0.56	0.16
Prior-Beck Depression Inventory **Continuation-Beck Depression Inventory**	4.58	0.97	0.03
Post-Depression Inventory **Continuation-Beck Depression Inventory**	2.36	0.95	0.01



Depressive disorder -Hamilton Depression Rating Scale			
Prior- Hamilton Depression Rating Scale **Post-Hamilton Depression Rating Scale**	-1.04	0.74	1.01
Prior- Hamilton Depression Rating Scale **Continuation- Hamilton Depression Rating Scale**	-0.96	0.89	1.01
Post- Hamilton Depression Rating Scale **Continuation- Hamilton Depression Rating Scale**	0.07	0.54	0.98

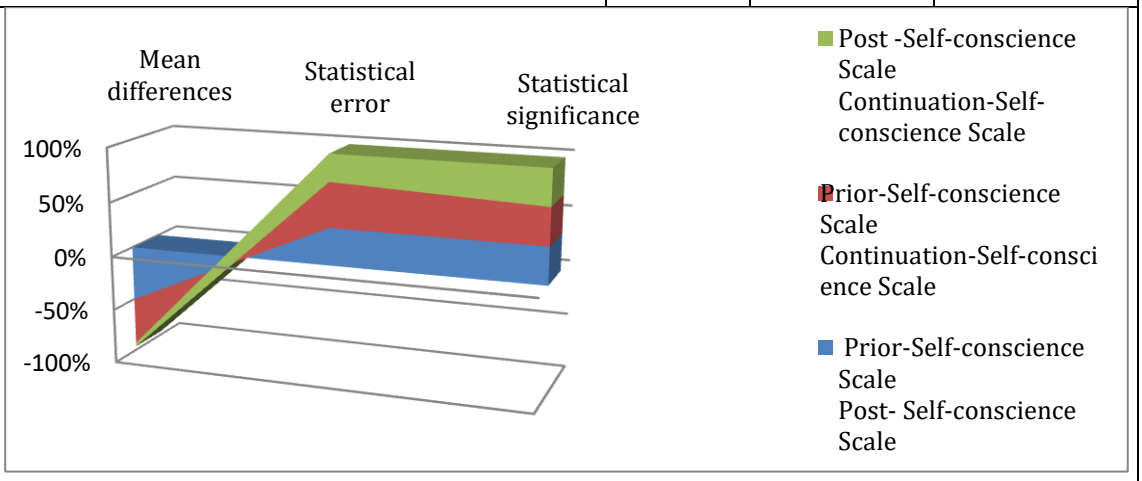


Group ruminative response			
Prior- ruminative response scale **Post-ruminative response scale**	7.96	0.86	0.002
Prior- ruminative response scale **Continuation- ruminative response scale**	10.63	0.94	0.002
Post- ruminative response scale **Continuation- ruminative response scale**	1.58	1.76	0.158

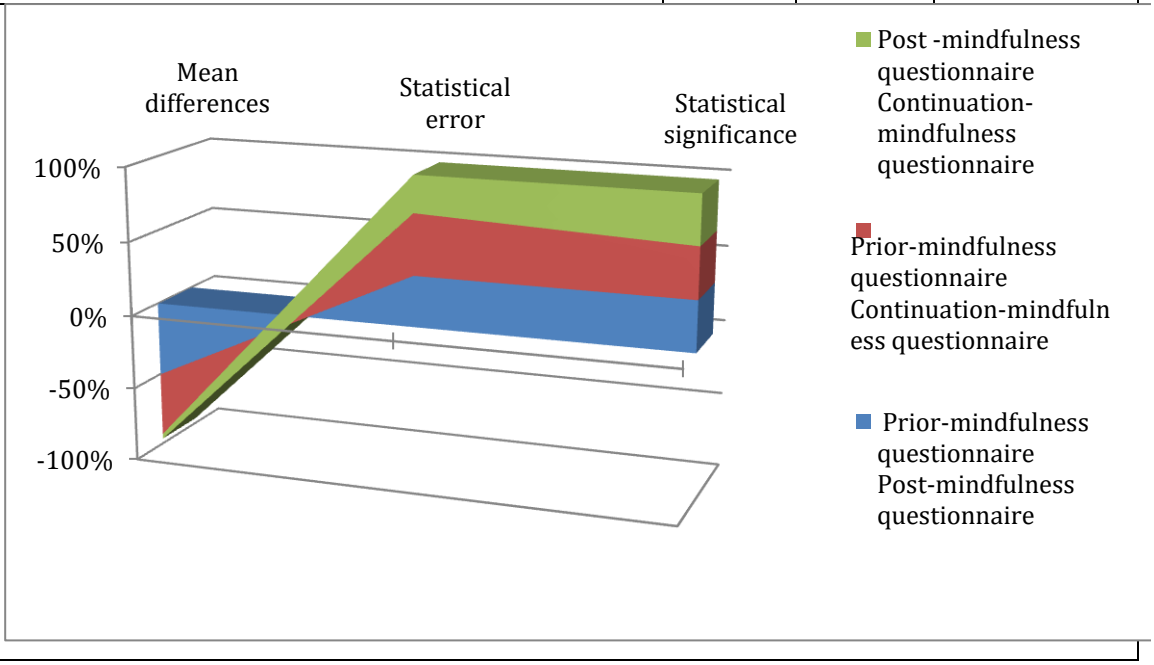


Self-conscience/group			
Prior- Self-conscience Scale **Post-Self-conscience Scale**	1.97	0.74	0.039

Prior- Self-conscience Scale **Continuation- Self-conscience Scale**	3.82	0.75	0.004
Post- Self-conscience Scale **Continuation- Self-conscience Scale**	0.93	0.64	0.142



Awareness(mindfulness)/group			
Prior- mindfulness questionnaire **Post-mindfulness questionnaire**	-3.28	0.89	0.24
Prior- mindfulness questionnaire **Continuation-Beck Depression Inventory**	0.96	0.76	0.64
Post- mindfulness questionnaire **Continuation-Beck Depression Inventory**	2.69	0.81	0.03



6. INTERPRETATION

The current research was conducted to determine the efficacy of mindfulness based psychotherapy for introspection, mindfulness, and consciousness in treatment resistant depressed patients. The findings suggest that mindfulness based psychotherapy reduced depressive episodes in the experimental class compared with the control class, which really is consistent with findings as per the objectives. Mindfulness based psychotherapy tends to promote a dissociated or disinterred perspective of another's thought processes, emotional responses, and sensory experiences. The findings of the current study asserted that in comparison to the control group, mindfulness based psychotherapy reduced rumination in the experimental class. These findings are comparable to existing empirical analysis. Kingston et al. and Nolen-Hoeksema help us understand the function of ruminations play in depressive symptoms vulnerabilities. The decentering conceptual model can be generally regarded to describe how mindfulness based psychotherapy works in ruminations. Decentering means having the ability to stay focused on and to recognize thoughts and emotions in a state of non-judgment. Research findings have already shown that amount of depression misconception, which is something the patient can pay critical attention to the practical, can be reduced by decentring.

Decentering involves disassociating, segregating, permitting and embracing strange emotions. By strengthening trends in psychotherapy, it is noted that behavioral control mechanisms, psychotherapy may significantly reduce ruminating strategies and thereby reduce anxiety and depression. Mindfulness based psychotherapy for untreatable depression in the empirical framewok directly contributed us to make the assumption that $\mathscr{MBP}$ can significantly lower treatment resistant depression. The results of this investigation indicate that, comparison to the control group, $\mathscr{MBP}$ increased awareness in participants in the experimental group. Experiments are undertaken for the investigation and meta-analysis to investigate the effects of consciousness professional development program. The outcomes of these studies are compatible with exiting analysis.

In additament, the findings of this research have shown that mindfulness based psychotherapy leads to even more actualization. These findings are comparable with substantiation of increased self-compassion for involvement in mindfulness interventions and attention-based functioning. Undoubtedly, developing a clear understanding the chance to empathize compassion for oneself and acknowledges personal errors, negative behaviours and emotional responses. When an individual is treated of experiencing and recognizes it without assessment, there is sufficient space in the mind for consciousness and a desire for self-

suffering is established. Several mathematical frameworks have highlighted the significance of actualization in well-being advancement, psychological distress significant decrease and stress adaptability.

7. CONSEQUENCES

There have been no variations in gender, educational attainment, relationship status, or age between the experimental group and control group when demographic and medical characteristics were compared. The parameters were subjected to descriptive analysis. To test the data distribution, the Kolmogorov-Smirnov testing was carried. The findings demonstrate that all residuals are normally distributed ($p > 0.05$). Furthermore, the Levene test was employed to determine if parameters in the treatment and control groups had identical variances. The findings confirmed that the variances of the categories were not significantly different ($p > 0.05$).

development of the project was conducted in a blind randomized controlled manner.

8. RESTRICTIONS

The conclusions of this research were really a quasi - experimental design, with a follow-up time of one and half month throughout the research analysis which doesn't really actually encourage for valuable recommendations regarding probable lengthier consequences and comparative analysis between mindfulness based psychotherapies.

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