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How do Mindfulness integrate Cognitive Behaviour Therapy Improves Mental Distress? An Evidence-Based Review

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ABSTRACT--*Research on the effects of mindfulness training have shown improvements in attention skills; social skills; sleep quality; well-being; and reductions in anxiety, depression, somatic, and externalizing symptoms in clinic-referred individuals. MiCBT is an integrated therapy of traditional establishment of mindfulness (Burmese Vipassana tradition of Ledi Sayadaw and U Ba Khin) with solid and deep-rooted principles of cognitive and behavioral traditions (CBT),developed by Dr. Bruno Cayoun. The aim of this study is to map, and assess the effectiveness of MiCBT on symptoms (Depression, Anxiety, Stress and OCD) of mental distress by analyzing randomized controlled design or quasi-experimental or pre-test/post-test design or within subject design. Systematic searches were conducted on electronic databases such as SCOPUS, Web of Science, Google Scholar, and PubMed for the time periods of 2010 to 2020. The 13 articles were screened but due to the inclusion and exclusion criteria only 8 articles were reviewed in the study. As the result found that MiCBT is effectual and comprehensive therapy treatment in reducing depression, anxiety, sleep quality, fatigue and stress for patients with MS (Pouyanfard., et al.2018;Bahrani.,et al.2017); efficacious in treating patients with POs without prominent overt compulsions (Kumar,A.,et al.2016); significant positive effects on mindfulness, flow, and pessimism(Hamilton et al.2016).However, in both clinical and non clinical population are being undertaken in view to study the efficacy of MiCBT, there is lack of empirical studies and to prove the efficacy of the therapy thoroughly, more experimental & RCTs are in need.*

Keywords*-- MiCBT, Mental Distress, Depression, Anxiety, Stress and OCD.*

I. INTRODUCTION

Originating in Buddhist tradition, mindfulness has gained recognition in Eastern as well as Western world. It is the practice of purposeful attention without judgment**,** in other words, refers to awareness of one's emotions, cognitions, mind states, as well as to one's environment and relationship to others. Mindfulness meditation is the practice of being aware of present-moment and experiences it without trying to push it away or over-indulging. According to Bishop.,et.al. 2004, a two-component model of mindfulness includes: Self-regulation of attention to present moment experience; and approaching present moment experience with a sense of curiosity, openness, and acceptance.

Research on the effects of mindfulness training with adolescents is more limited, some studies have documented improvements in attention skills; social skills for students with learning disabilities; sleep quality; well-being in adolescent boys; and reductions in anxiety, depression, somatic, and externalizing symptoms in

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clinic-referred adolescents(*Napoli,et al 2005;Huppert, et al 2010)*. More research using thorough experimental designs is needed to evaluate the effects of mindfulness-based approaches among youth, mostly approaches that can be integrated into ongoing high school curricula as worldwide prevention (*Burke, C. A. (2010).*

Mindfulness–integrated Cognitive Behavior Therapy (MiCBT) is a systematic approach that integrates mindfulness meditation with care elements of cognitive and behavioral methods was developed by Dr Bruno Cayoun in 2003. The MiCBT program teaches skills in managing mind-wandering and emotions, awareness of thinking processes, body sensations and self-compassion. Mindfulness meditation practices are central to the program. MiCBT consists of a four-stage trans-diagnostic treatment approach, i.e., it is applicable with a wide range of conditions and ages. It is based on the integration of traditional establishment of mindfulness (Burmese Vipassana tradition of Ledi Sayadaw and U Ba Khin) with solid and well-established principles of cognitive and behavioral traditions (CBT).

Cayoun.B (2004, 2011) integration model of mindfulness core principles and traditional CBT; Mindfulness-integrated Cognitive Behaviour Therapy (MiCBT) relies on a neuro-phenomenological model of reinforcement, the Co-emergence Model of Reinforcement. This approach involves a detailed account of micro-level reinforcement and extinction principles, as they are actually experienced

II. STAGES OF MiCBT

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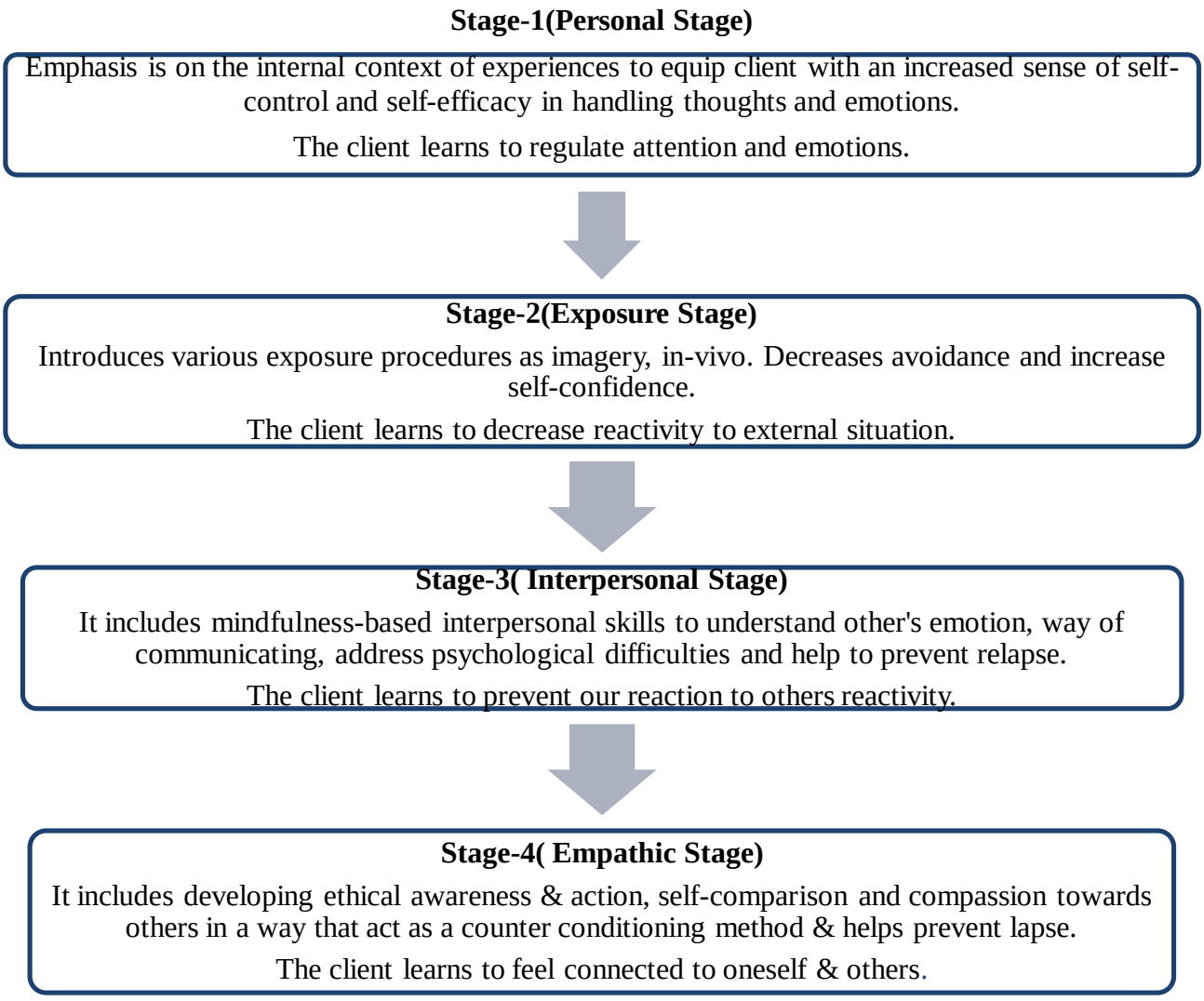

Source*:* Mindfulness-integrated Cognitive Behavioural Therapy: Rationale for integration and the MiCBT model (2013)

In a case series, participants reported reductions in depressive and stress symptoms, and additionally reported a reduction in anxiety symptoms. Participants who completed treatment rated the treatment as acceptable. MiCBT shows promise as an intervention to assist parental carer of children with ID (*Osborn, R., et.al (2019).* MiCBT has been effective in reducing pain and enhancing pain self-efficacy in breast cancer patients. Therefore, it can be an adequate complementary therapy for patients with breast cancer *(Motlagh,M.R., et.al (2018).* A significant reduction in symptoms of PTSD and major depression in the MiCBT group and suggested that this approach may have lasting benefits for individuals with traumatic and depressive symptoms *Kamal, M. N., et.al. (2018). Type,A., et.al. (2016*) a quasi-experimental designed research found out that treatment of MiCBT is an effective way to reduce students' romantic mistrust and jealousy as well as increase their level of satisfaction. *Farzinrad, et al (2013)* found a significant difference between pre-test & post-test, post-test & follow up on behavioral, decision making procrastination, negative perfectionism and worry and in favor of MiCBT's higher effectiveness. Comparative to REBT, the effectiveness of MiCBT on decreasing of behavioral, decision making procrastination, negative perfectionism and worry was higher. But both of them had equal effectiveness on positive perfectionism.

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However, regardless of promising findings to date, research about the efficacy of MiCBT as a therapeutic approach is in its infancy stage. Although studies exploring the efficacy of MiCBT in both clinical and non-clinical populations are currently being undertaken, empirical evidence is lacking, especially in the area of non-clinical populations.

III. METHOD

Objective

The aim of this study is to map, and assess the effectiveness of MiCBT on symptoms (Depression, Anxiety, Stress and OCD) of mental distress.

Search Strategy

Systematic searches were conducted on electronic databases such as SCOPUS, Web of Science, Google Scholar, and PubMed for the time periods of 2010 to 2020. Along with this, reference lists of identified original and review papers were reviewed for any cited articles that fit the criteria of this review. Keywords were MiCBT and depression/depressive disorder, Stress, Mental Distress, Anxiety, Mental Health problem, yielding 224 articles. There were 61 records after duplicates & other empirical researches were removed from the search results. Sixty one articles were screened for intervention. Of those 61 articles, 24 articles were omitted due to not having an intervention or utilizing interventions that did not target depression, anxiety, stress or OCD (n = 24); Books & Clinical Handbooks were removed(n=5) or articles written in other languages were omitted(n=13) and consisting of review, case studies and discussion articles (n = 6). The remaining 13 articles were screened using the inclusion and exclusion criteria and found (n=2) studies are still in progress & other (n=3) full paper aren't available, attempts were made to contact the author & if a reply was not received within 2 weeks from the corresponding author, abstracts were read to check if they had the required information.

Study Selection

Inclusion criteria for studies in this review were the following:

1. Publications between 2010 and 2020.
2. Publications in the English language.
3. Studies that measured symptoms of mental distress (depression, Anxiety, Stress & OCD)
4. Studies that used MiCBT as an intervention.
5. Studies that used a randomized controlled design or quasi-experimental or pre-test/post-test design or within subject design.

The exclusion criteria were the following:

1. Studies that did not measure symptoms of mental distress (depression, Anxiety, Stress & OCD)
2. Studies that was incomplete or ongoing, manuscript still in preparation or full paper not available.
3. Articles that were published in a journal not indexed in any of the following databases: SCOPUS, Web of Science, Google Scholar, and PubMed.
4. Qualitative studies, Review paper, Books, Handbooks were excluded.
5. Studies that were in other different languages except English.

The articles were assessed by both the authors. After reviewing the articles, there were 8 studies included in the systematic review to be analyzed & to understand the efficacy of MiCBT on different symptoms of mental distress. Important components of each study were reviewed include original reference, duration of the intervention, age of participants, time of assessments, measures used to identify the symptoms, design and sample, and findings.

IV. RESULT TABLE

Table 1: Summary of MiCBT as a Treatment for Symptoms of Mental Distress (Depression, Anxiety, Stress & OCD) conducted between 2010 and 2020 (n = 8)

Study,Year & Country	Intervention & Description	Sample Size & Age	Measures/Tools	Follow Up/Duration	Design
Frances, et al(2020) Australia	MiCBT treatment in a group format comprising weekly two-hour sessions to groups of 10–15 participants for 8 Weeks.	102 samples 18-75 years	Kessler Psychological Distress Scale; Depression, Anxiety, and Stress Scale (DASS-21); Satisfaction with Life Scale (SWLS), The Flourishing Scale (FS); Mindfulness-based Self-Efficacy Scale-Revised (	6 months	Randomized controlled trial
Pouyanfard et al(2018) Iran	MiCBT including eight treatment sessions. Two introductory sessions were held prior to the main sessions to familiarize group members with the	20 samples (8 male & 12 female) 18-50 years	Beck Anxiety Inventory; Pittsburgh Sleep Quality Index; Fatigue Severity Scale	-	Quasi-experimental study

	process of group therapy				
Bahrani et al(2017) Iran	MiCBT group-training program held in eight 120-minute sessions once a week.	47samples (Female) 20-45 years	Depression, anxiety, and stress scale (DASS-21),	---	Quasi-experimental study
Hamilton et al(2016) Australia	Eight-week MiCBT programme consisting of regular weekly workshop sessions, home meditation Training, and group stationary cycle mindful-spinning sessions.	47 cyclists(5 females & 42 males) 16 years of age or older.	Dispositional Flow Scale-2,Sports Anxiety Scale-2, Five Facet Mindfulness Questionnaire, Sport-related Pessimism	---	Randomized controlled trial.
Kumar et al(2016) India	12–16 sessions of MICBT	27 samples Mean age (29.67)	Yale–Brown Obsessive-Compulsive Scale (YBOCS);Clinical Global Impression Scale; Montgomery and Asberg Depression Rating Scale; Toronto Mindfulness Scale	3 month	Within-subjects design,
Yazdanimehr et al(2016) Iran	MiCBT program which was implemented for 8 weeks, 90-minute sessions.	63 pregnant women with an age of one to six months. 26 was the mean age.	Edinburgh Postnatal Depression Scale,& Beck Anxiety Inventory	1 month	Randomized controlled trial.

Baker et al(2014) Australia	8 week MiCBT programme	258 samples(122 females & 136 males Age over 16 years	Beck Depression Inventory; Global Assessment of Functioning	---	Randomized controlled trial

V. DISCUSSION

Mindfulness is positively associated with a variety of indicators of psychological health, such as higher levels of positive effect, life satisfaction, vitality, and adaptive emotion regulation, and lower levels of negative affect and psychopathological. *Frances, et al(2020)* recruited 102 participants via medical practitioner referral will be randomized to MiCBT or a wait-list control. The age range 18–75 years old. The MiCBT treatment group receives an 8-week MiCBT intervention delivered in a private psychology practice and the control group receives usual treatment. Primary outcome measures are the Depression Anxiety Stress Scale-21 (DASS-21) and K10. Analysis will use mixed-model repeated measures. The potential ability of MiCBT to provide a comprehensive therapeutic system that is applicable across diagnostic groups would make it an attractive addition to the available MBIs. *Pouyanfard et al (2018)* investigated the effectiveness of mindfulness-integrated cognitive-behavioral therapy (MICBT) on sleep quality, anxiety, and fatigue in patients with MS. Twenty samples (n=20; 8 men & 12 women) with MS was randomly assigned to MICBT or control groups. Beck Anxiety Inventory (BAI), Pittsburgh Sleep Quality Index (PSQI), and Fatigue Severity Scale (FSS) were used for data collection. A significant reduction in anxiety ($d = 0.62$) and fatigue ($d = 0.56$) and a significant increase in sleep quality ($d = 0.56$) were observed in the experimental group compared to the control group ($P < 0.05$). MICBT is effective on the anxiety, sleep quality, and fatigue in patients with MS. As a result, mental health professionals can take advantage of this treatment to address the psychological problems of these patients.

Bahrani et al (2017) aimed at examining the effect of mindfulness-integrated cognitive behavior therapy on depression, anxiety, and stress in females with multiple sclerosis. A quasi-experimental study conducted on female patients with MS who was referred to Fars MS Society, Shiraz, Iran, in 2015. A total of 56 MS patients were selected by convenience sampling and randomly assigned into intervention and control groups. The intervention group received eight 2-hour sessions of MiCBT, while the control group was only given the usual treatment (TAU). A demographic questionnaire along with depression, anxiety and stress scales (DASS-21) were filled out by the patients. No statistical significant differences were found between the study groups in demographic variables ($P > 0.05$). ANCOVA revealed significant differences between the study groups in all the 3 variables in post-test compared to the pretest. Depression, anxiety, and stress's mean scores in the MiCBT group were significantly lower than the control group ($P < 0.001$). The mean score of depression decreased to 6.17 ± 5.7 after the intervention ($P < 0.001$). Also, the mean score of anxiety significantly reduced to 6.09 ± 5.2 in post-intervention ($P < 0.001$). The mean score of stress also decreased to 10.87 ± 6.3 compared to the pre-test ($P < 0.001$).The results concluded that mindfulness-integrated cognitive behavior therapy is an effective and affordable treatment in reducing depression, anxiety, and stress for patients with MS. *Hamilton et al (2016)* investigated whether mindfulness

training increases athletes' mindfulness and flow experience and decreases sport-specific anxiety and sport-specific pessimism. Cyclists were assigned to an eight-week mindfulness intervention, which incorporated a mindful spin-bike training component, or a wait-list control condition. Dispositional Flow Scale-2, Sports Anxiety Scale-2, Five Facet Mindfulness Questionnaire, Sport-related Pessimism were the tools used. The decrease in anxiety among the intervention group cyclists was significant from pre- to posttest t (26) = 3.12, p = .004, 95% CI [1.49, 7.02], with a medium effect size, d = .61. ANCOVA showed significant positive effects on mindfulness, flow, and pessimism for the cyclists in the intervention condition compared with the cyclists in the control condition. Changes in mindfulness experienced by the intervention participants were positively associated with changes in flow.

Kumar et al (2016) in this study, twenty-seven patients were recruited from the specialty OCD clinic and the behavior therapy services of a tertiary care psychiatric hospital over 14 months. Patients had few or no overt compulsions and were free of medication or on a stable medication regimen for at least 2 months prior to baseline assessment. All patients received 12–16 sessions of MICBT on an outpatient basis. The Yale–Brown Obsessive-Compulsive Scale (YBOCS) and the Clinical Global Impression Scale were administrated. Of the 27 patients, the average mean percentage reduction of obsessive severity at post intervention and 3-month follow-up was 56 (standard deviation [SD] = 23) and 63 (SD = 21), respectively. Results suggested that MICBT is efficacious in treating patients with POs without prominent overt compulsions. The results of the study encourage and suggest that a larger randomized controlled trial examining the effects of MICBT may now be acceptable. Yazdanimehr et al (2016) aimed to examine the effect of MiCBT on depression and anxiety among pregnant women. 63 pregnant women were selected as the convenient sample and randomly allocated to either the experimental group who received the MiCBT or control group, received only routine prenatal care services. For the data collection, Edinburgh Postnatal Depression Scale& the Beck Anxiety Inventory were used. The mean scores of depression and anxiety in the experimental group were significantly lower than the control group at P>0.001 level. As a suggestion, implementation of MiCBT to alleviate depression & anxiety alongside with other prenatal services is recommended.

Baker et al (2014) conducted comparing several manualised MICBT for adults with co-existing alcohol misuse and depression. A sample of 258 samples over the age of 16 years was included in the study. Tools used were Beck Depression Inventory, Global Assessment of Functioning, a clinician-rated indicator of psychological, social and occupational functioning and The Structured Clinical Interview for DSM-IV-TR. The control group was receiving Treatment as usual (TAU).Overall improvements at each time point relative to baseline (e.g., average improvement: 21.8 drinks per week; 12.6 BDI-II units; 8.2 GAF units). For the reduction of depression and improving functioning, longer interventions tended to be more effective, but not alcohol consumption, except during the initial treatment phase. *Becker, T.,(2013)* evaluated the effectiveness of Mindfulness integrated Cognitive Behavioral therapy MiCBT delivered over a 9-week group program in a sample of 33 family carers. Depression, Anxiety and Stress Scale; Mindfulness-based Self Efficacy Scale Revised; Care Recipient Questionnaire were the measures. 33 family carers(3 males & 30 females) over the age of 43 years to 82 years were the sample of the study. A statistically significant decrease in participants 'self-rated levels of distress over time were found for Depression, $F\ (2, 29) = 17\ .02$, $p < .001$,1)2 = .486, Anxiety, $F(\ 1, 26) = 21.\ 78$, $p < .001$, 1)2 = .548, and Stress, $F\ (\ 1, 26) = 41.85$, $p < .001$, 1)2 = .699.

VI. CONCLUSION

After analysis all the literature, it can be concluded that even after being at infancy level, MiCBT has a powerful impact in alleviation of depression, anxiety, sleep quality, fatigue, stress and OCD. Researcher has commented MiCBT as an adequate complementary therapy in reducing pain and enhancing pain self-efficacy in breast cancer patients *(Motlagh,M.R., et.al (2018)*. Each and every study came out with some good level of decrease in type of distress patients was going through. Samples/Patients found it affordable and comfortable therapy to practice. However, in both clinical and non clinical population are being undertaken in view to study the efficacy of MiCBT, there is lack of empirical studies and to prove the efficacy of the therapy thoroughly, it would be important for the field to attempt to replicate and extend these findings in larger, multi-center, randomized, blinded (at least single blinded) studies with the control group receiving alternative treatments.

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