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How Effective Is Cognitive Behavioural Therapy On Women Living In Low- And Middle-Income Countries With Postnatal Depression: A Systematic Review And Meta-Analysis

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Abstract Throughout the entire world, depression is the main factor in mortality as well as general incapacity. The greatest reason of incapacity worldwide, according to the WHO, seems to be depression. There is a significant gap in the study on mental wellbeing in Low and middle - income, in which over than 80 percent of the world's population presently resides. By using EPDS ratings from the Edinburgh Postnatal Depression Scale, the study's objectives are to determine how receiving cognitive behavioural treatment for postpartum depression impacts women in lower - middle as well as middle nations. Method:5 studies with randomised controlled trials (RCTs) that were performed in English throughout 2000 and 2021 were included in this search strategy. The findings demonstrated that all five publications analyzed the EPDS scale's average scores for the CBT and control subjects. The experimental technique used was the IV, Randomized, 95 percentage CI standardised difference in means. After Cognitive Behavioral Therapy session from both groups, the results showed that Cognitive Behavioral Therapy was more effective than no Cognitive Behavioral Therapy (Cohen's d=-2.02, 95% CI= [-4.00, -0.04], P=0.05). Conclusions: In general, Cognitive Behavioral Therapy was thought to provide adequate alleviation for the mental conditions that PND patients experienced also contributed to better short-term results, lowering the prevalence of postnatal depression.

Introduction

In low- and middle-income countries, PND is a significant public wellness problem. It is also the world's most prevalent cause of mortality as well as overall incapacity. WHO reported in 2001 that women experience depressive episodes at a rate that is 1.7 times higher than that of men (1). Depression is frequently accompanied by poor social functioning, which lowers the standard of living for those suffering from it as well as for their family (2). Within a year after the child's delivery, PND, a type of depression that starts in the postpartum phase, can be identified. During first postpartum period, sometimes known as the postnatal phase, between ten to twenty percent of females develop a mental or emotional problem (3). Relatively young age, a tendency of depression, unwanted pregnancies, earlier trauma, as well as intimate partner abuse are major risk factor linked to the onset of PND. Frequent PND symptoms are mood swings, shame, sadness, as well as suicide thoughts which could last for months after delivery (4).

There is a significant disparity in the amount of psychological health research conducted in Low and middle - income, in which more than 80 percent of the world's population’s living. Research shows that it is hardly 6 percent of total of all LMICs' research on mental health has been published. The total mental health burden as a disease in LMICs will make up 19.1% of all

medical conditions until 2030 as per calculations (5).

Mothers' mental stress as well as depression have indeed been primarily linked to poor maternal health issues, poor newborn development, and a low birth weight of infants in LMICs like Pakistan, India, China, Bangladesh, as well as Nigeria (6). The signs and symptoms of postpartum depression can range from mild to severe. Symptoms typically appear within the first few weeks following delivery, while they can occasionally start prior pregnancy and even up to one year afterwards. The Sustainable Development Goals call for the prevention as well as treatment of psychological issues until 2030, with a particular emphasis on the value of maternal psychological well-being for improving early childhood development (7). There's a vacuum among the requirement to address substandard postpartum mental care as well as build better multisectoral cooperation between the healthcare industry as well as other aid organisations (8). Studies on maternal mental well-being must prioritise implementing evidence-based practises in the region's low- and middle-income countries' postpartum care (9)

Regarding the primary treatment option for PND, pharmacological, psychotherapy, or both, are now being explored. Cognitive therapy, interpersonal psychotherapy (IPT), as well as problem-solving therapies are examples of psychological treatments with strong empirical support (10). A psychotherapy approach based on mother-child bonding was created through 3 research (11-13). Nevertheless, in all these investigations by Cooper et al., the ratings on the Edinburgh Postnatal Depression Scale (EPDS) in all categories were consistent at twelve months. The third trial of de Alencar et al. (13)showed a decrease in Postnatal depression, although generalisation and also the lack of a control group hampered the original study conclusions. The majority of researches have relied upon a variety of methods with the mother as the central focus, including psycho - educational, cognitive therapy, problem-solving, and behavioural (10).

Similar research conducted in Chile by Rojas et al. (14) combined systematic pharmacology where necessary with talk therapy. It comprised a 6 months pharmacological treatment strategy coupled with an 8 week psychoeducational program that was focused at the larger social environment. Antidepressant medications as well as short psychotherapeutic sessions were a normal part of care. The average EPDS rating at three months indicated that women who got the multi - component treatment saw a reduction in the intensity of Postnatal depression, whereas the total drop in PND load was equivalent at Six months (14). There is little research published on pharmacologic drugs as well as the synergistic impacts of talk therapy as well as drug therapy in Low and middle - income. This research was the sole one to concentrate on psychiatric drugs.

The Cognitive behaviour therapy approach appears to be a promising psychotherapy treatment of PND problems in people from various regions as well as cultures (15). According to studies women in low and middle - income countries who are economically disadvantaged are much more likely to experience developing mental health issues. The body of research suggests that interventions for the management of postpartum depression could be developed simply by taking into account clients' culturally oriented values as well as beliefs (16, 17).

The South Asian demographic is relatively understudied in PND studies conducted as a subset of women in low and middle - income countries. Self harm is thus the psychological health consequence with the highest mortality rate in Indonesia, Nigeria, India, as well as Pakistan (18). Based on the Edinburgh Postnatal Depression Scale (EPDS), the prevalence of psychiatric as well as mental issues in Nigerian

were reported to be 23 percent in the postpartum period (19).

According to another study (20) about 12.5 percent of total women are admitted to mental facilities throughout the postpartum period.Poverty, a low level of social support, as well as an absence of economic empowerment are some of the recognized barriers to implementing cognitive behavioral therapy in low and middle-income countries; therefore, cultural adaptability is necessary to validate the adequacy of CBT as well as carry out the adaptation (8). There is a demand for more effective ways to treat PND, so CBT is one such method. Cognitive-behavioral techniques have so far been observed to be effective in depressed symptoms (21). There is no conclusive evidence from low and middle-income countries demonstrating the effectiveness of talk therapy for PND mums (22).

METHODOLOGY

The review question is: How successful is cognitive behavioural therapy (CBT) for postpartum depression in grownup women who live in LMIC's?

To determine if cognitive behavioral therapy is helpful for the group of women representing Low and middle - income countries, a comprehensive review as well as meta-analysis was done. Based on the world statistics, low- and middle-income nations were determined. According to the World Bank, low-income nations are ones having a 2020 GNI per capita of $1,045 or even less. Utilizing a comprehensive publication search approach in line with the PRISMA 2020 guideline, various research papers were reviewed. PsycInfo, Medline, as well as CINAHL Plus were the 3 sources that were examined for information that was pertinent to the research. Medical subject headings (MeSH) terminology were employed as the keyword syntax in the PICOS (Population, Intervention, Comparator, Outcome, and Study Design) search method. The pre-defined sources were utilized to find 711 publications. In the selection stage, a total of four Randomized trials were chosen for the post process. The "Preferred Reporting Guidelines for Systematic Reviews and Meta-Analyses" (PRISMA 2020 statement as amended from) were also adhered to in this investigation (23). The CASP 2021 assessment lessened the chance of bias in this research. By using PICOS as well as primarily referring to the CASP 2021 queries, the study has been evaluated. To give an evidence synthesis of results, a narrative synthesis was carried out.

5. Results:

All 4 of the examined publications were random clinical studies, as was stated. The smallest sample size was generated by (24) (N=64), followed by (25) with 213 participants, Husain et al. 2017 with 247 participants, as well as (26) with 397 participants. Many researches assessed the usefulness of Cognitive behavioral therapy as a therapeutic method for the different sections of women. In addition to examining quality of sleep, (25) looked at Cognitive behavioral therapy in association with structured family therapy for women with mild depression. The females in the control groups across all studies got either basic psychotherapy or drug treatment, depending on what the researchers thought was suitable; the variability among the control groups strengthened the random-effects model used for this meta-analysis.With the exception of (26), when the major mode was telephonic based but that one, the Cognitive behavioral therapy was provided in-person across all research studies. In these 4 Randomized trials, Cognitive behavioral therapy was given by medical practitioners like licenced midwives, psychiatrists, as well as veteran female medical staff. The EPDS score was utilised consistently throughout all investigations, whereas PSQI was utilised in 1 RCT (25). The treatment group's depressed

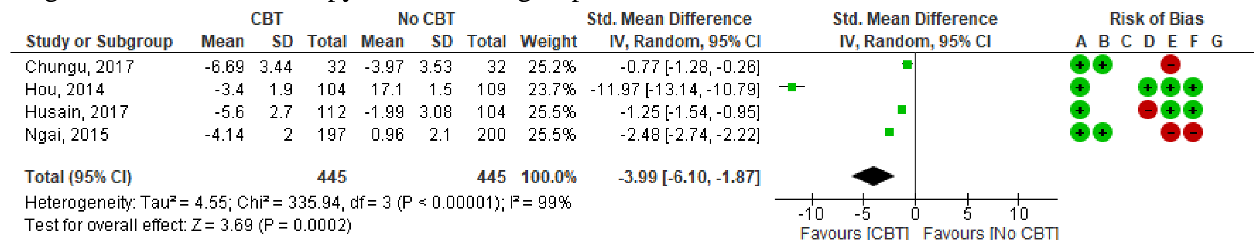
symptoms continued to improve, however the minimum threshold was three months. Maternal knowledge of psychosocial services was evaluated in the subjects, and it was found that the treatment techniques increased understanding of Cognitive Behavioral therapy (24).

The Forrest Plot for the Effect Size (Standardized Mean Difference) for EPDS Scores in CBT versus No-CBT groups

All 4 Rondom control trials variances between the final score and the starting point was calculated, and the results were then evaluated with a random-effects framework with 95 percentage margins of error. The empirical approach has been used to take into consideration the Random control trial built-in variations. The following results were obtained for the standardised mean deviation (effect size): SMD=-3.99, 95percentage CI=-6.1, -1.87, P=0.0002. These findings revealed that, by comparing starting to endpoint results, the Cognitive behavioral therapy intervention group exhibited lower EPDS ratings than the no-Cognitive behavioral therapy group.

According to the variability of the reviewed articles, the I2 statistical findings suggest that there was significant variance among the tests (I2=99%). The variability in the averaged effects is greater than that of the variation in the overall SMD, based on the heterogeneity tests (Tau2=4.55, Q=335.94, P0.0001), as well as the Q statistics reveals that now the effect size is statistically substantial. Z=3.69, P=0.0002, indicates the total effect of this study as highly important.

It should be highlighted that the meta-analysis gave weightage to the 4 Randomized trials, and neither a sensitivity analysis nor a subgroup analysis were carried out. The objectives were to determine whether or not Cognitive behavioural therapy was beneficial. In the 890 patients who were merged, the findings show a statistically significant improved performance in EPDS ratings.



Risk of bias legend
(A) Random sequence generation (selection bias)
(B) Allocation concealment (selection bias)
(C) Blinding of participants and personnel (performance bias)
(D) Blinding of outcome assessment (detection bias)
(E) Incomplete outcome data (attrition bias)
(F) Selective reporting (reporting bias)
(G) Other bias

Figure: Effect Size (Standardized Mean Difference) for EPDS Scores in Cognitive Behavioral therapy vs no cognitive behavioral therapy goups. Heterogeneity: $Tau^2 = 4.55$; $Chi^2 = 335.94$, $df = 3$ ($P < 0.00001$); $I^2 = 99\%$. Test for overall effect: $Z = 3.69$ ($P = 0.0002$).

5.2.2 Funnel plot of included studies to assess for publication

The funnel plot has been visually examined, as well as a scatterplot of the CBT effect vs the EPDS ratings were created. The chart beneath has been utilized as a visual reference to look for systematic biases or variability. Just one study, it has been observed, varied from the uniform, inverted funnel form that may be seen in records that are free of bias. Due to potential difficulties in producing or disseminating research in this field in low- as well as middle-income nations, publishing bias was apparent.

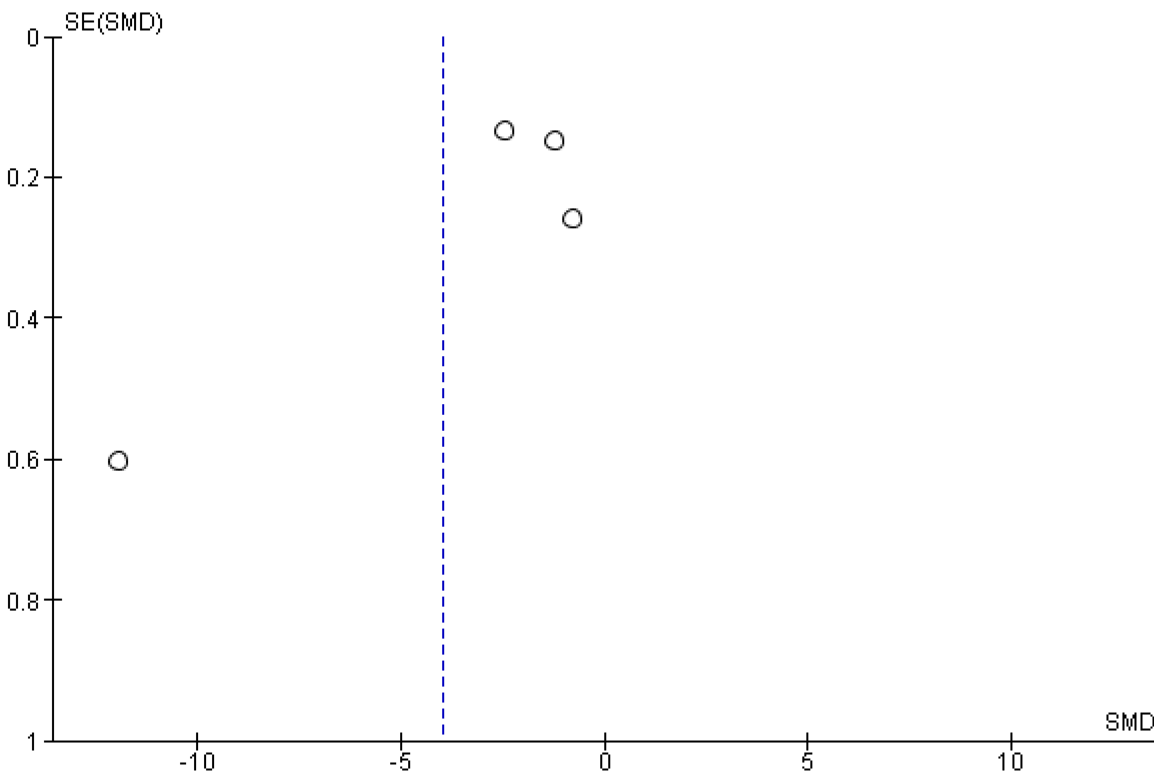


Figure Funnel plot for publication bias assessment.

Discussion:

The findings from this review indicate that Cognitive behavioural therapy is successful for treating grownup women having Postnatal depression, but they should be interpreted with cautiousness because of the limitations which are addressed beneath. All of the papers that were part of the quantitative research employed the EPDS as the instrument to evaluate Postnatal depression. Limited data was presented when the impacts of cognitive behavioral therapy on adult

PND-suffering women residing in Low and middle - income countries were questioned. During the postpartum time, Congitive Behavioral therapy approaches were much more beneficial than non-Cognitive Behavioral therapy approaches throughout trial arms compared to control arms. The outcomes demonstrate that the EPDS ratings post-intervention decreased uniformly. Although several other researches used cognitive behavioral therapy in addition to other traditional treatments or measures, it was hard to separate the outcomes of such analyses from the impacts of cognitive behavioral therapy solely. The CASP method, which the Cochrane Handbook suggests be utilized to be the most widely employed in identifying prejudices in Randomized trials, has been employed in this study to evaluate prejudices in a total of four RCTs.

It is important to take notice of the heterogeneities as well as homogeneities among studies. The greatest subjects (N=397) were recruited by (26), while the lowest (N=64) were recruited by (24). (25) included 213 subjects, while (27) recruited 247. (25) used a one-on-one counselling sessions to provide CBT over the course of Thirteen sessions that lasted Sixty minutes each week for a total of Thirteen weeks. In the experimental group, Cognitive behavioural therapy was given by (24) weekly for a maximum of Twelve sessions. Sessions for CBT last 45 to 60 minutes. Nevertheless, (27) used CBT in their "learning via play plus" programme, which incorporated maternal psychological as well as early child development interventions (LTP Plus). It was spread out over a 12-week period and included a total of ten group sessions, each lasting between 60 to 90 minutes.

According to the effect sizes (pre- and post-intervention) for all 4 Randomized trials, (25) had the greatest decrease in EPDS ratings with an effect size of -11.97 as well as a P-value of 0.001. The lowest drop in effect size measurements from pre- and post-intervention was shown by (24); possible reasons include the small sample size as well as the addition of drug therapy for both intervention as well as placebo groups, which would have hidden the genuine merits of Cognitive behavioral therapy solely.

The validity, results, as well as application of the four selected randomized trials were thoroughly evaluated. The research designs employed by (24), (26) along with (25) were well-executed, with strong procedures, and targeted topics of interest. The random sampling procedure, however, was not established by (27), and the study hypothesis did not correspond with the final assessments. Furthermore, (27) study only included a small subgroup of participants who lived in Karachi, Pakistan, urban areas; hence, it may not be generally applicable to our targeted demographic. With the exception of (27) the findings from all the included researches were applicable to the study's intended demographic. Substantial proof of CBT's effectiveness in the research sample was presented by (24), however more elucidation was needed to compare CBT's effectiveness to that of drug therapy. Overall, the results of the included studies supported the positive effects of cognitive behavioral therapy and were relevant as well as appropriate for the low and middle - income countries that made up the research's target demographic.

Even though the results were not taken into account altogether, some meta-analyses which evaluated the efficacy as well as dependability of Postnatal depression were highlighted during the research shortlisting process. Additionally, the present study is the inaugural in the field as no meta-analysis has previously emphasized on findings across women in low and middle - income countries. The outcomes of the four Randomized trials that were evaluated were contrasted with the standard of treatment that was accessible to participants. There were several definitions of Cognitive behavioral therapy

aspects as well as implementations that were stated in the systematic review findings throughout all of the studies that were part of this research. However, the results of the post-intervention meta-analysis had statistical relevance, and the advantages were found in women in all of the trials from low and middle - income countries. When comparing cognitive behavioral therapy interventions to non-CBT interventions, a quantification produced a Cohen's d value of -2.02 (P=0.05).

Contrary to widely held opinions that Cognitive behavioural therapy may not be effective in low and middle - income countries, this research concluded that Cognitive behavioural therapy was effective regardless of the method of delivery. The starting point EPDS rankings across low and middle - income countries did not reveal any significant mean differences. According to the research's main findings, Cognitive behavioural therapy is likely to have positive post-CBT impacts, but the effectiveness of Cognitive behavioural therapy vs the drug treatment may continue to be ostracised in low and middle - income countries far beyond HICs because of individual belief systems or prejudices held by women in the research's included areas. People involved may choose to use other therapeutic modalities to increase treatment adherence with Cognitive behavioural therapy; Cognitive behavioural therapy may or may not be used as the only technique of providing mental health services.

The effectiveness of cognitive behavioral therapy and its various forms were evaluated using the pre / post analyses. Future research in this domain may need to be strengthened because the long-term consequences were uncertain. Although cognitive behavioral therapy is developing as a psychiatric cure for depressive episodes that has undergone extensive investigation, it is seldom accessible in Low and middle - income countries. Before cognitive behavioral therapy is implemented across Low and middle - income countries, cultural modification is necessary, because there may be a number of difficulties involved. For example, cognitive behavioral therapy may not be as popular in some Asian nations as religious rituals. It is undoubtedly crucial to comprehend the regional barriers to psychotherapy, the role of families, as well as regionalized changes to therapeutic interventions before applying Cognitive behavioral therapy in Low and middle - income countries.

Conclusion

In general, Cognitive behavioral therapy is thought to provide adequate alleviation for the mental symptoms postpartum depressed women experience. Also it aids in short-term performance improvement by lowering the incidence of PND. Even though the results were varied among the analyzed publications, there were variations in each one's assessment processes, diagnosing procedures, as well as follow-up. RCTs of a high calibre should therefore be supported in Low and middle - income countries. There definitely have to be various changes before Cognitive behavioral therapy is considered a viable therapy option in Low and middle - income countries. It is important to take into account aspects like service delivery as well as organisation, patient beliefs about the therapy and health in general, as well as other existing circumstances. Cognitive therapy has so far demonstrated potential as a viable therapeutic approach for treating female depression in both inpatient as well as outpatient settings.. Most LMICs are likely to require Cognitive behavioural therapy, which calls for proper training of psychologists as well as healthcare providers to offer the treatment affordably as well as successfully for the general public. Furthermore, given the results of this research that CBT does enhance EPDS ratings in women with ppd, more learning in this field as

well as women's acceptance may result in widespread application.

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