

**META-ANALYSIS ON THE IMPACT OF GROUP-BASED ONLINE INTERVENTION ON
MATERNAL PSYCHOLOGICAL WELLBEING AMONG PRIMIGRAVIDA MOTHERS**¹*M. Mumtaz, ²Dr. Sampooram W. and ³Dr. P. Padmavathi¹PhD Nursing Scholar, The Tamil Nadu Dr. M.G.R. Medical University, Chennai, Tamil Nadu, India.²Principal, Bhavani College of Nursing, Erode, Tamil Nadu, India.³Principal, Dhanvantri College of Nursing, Namakkal, Tamil Nadu, India.

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ABSTRACT

Online group interventions represent a promising approach to promoting maternal psychological wellbeing among primigravida mothers in selected tertiary hospitals. This meta-analysis aims to examine the effects of online group interventions on the psychological wellbeing of first-time pregnant mothers, focusing on studies done in selected tertiary hospitals. A thorough search was done across databases including PubMed, PsycINFO, and Google Scholar for relevant studies published between January 2010 and December 2023. Results of subgroup analyses revealed that longer intervention durations and higher frequencies of online sessions were associated with larger effect sizes.

KEYWORDS: Meta-Analysis, Group-Based Online Intervention, Maternal Psychological Wellbeing, Primigravida Mothers.

INTRODUCTION

The mental health of primigravida mothers is an important concern in maternal healthcare, as it greatly impacts both the mother and child's wellbeing. As online platforms become more accessible and used, group interventions online have emerged as a potential tool to support the mental health of pregnant women.

METHODS

A thorough search was done across databases including PubMed, PsycINFO, and Google Scholar for relevant studies published between January 2010 and December 2023. The search terms included variations of "group online intervention," "maternal psychological wellbeing," primigravida mothers". Studies were included if they: (1) were conducted in selected tertiary hospitals, (2) targeted primigravida mothers, (3) used online group interventions, and (4) reported outcomes related to maternal mental health. The quality of studies was assessed using established criteria such as the Cochrane Collaboration's tool for evaluating risk of bias. The meta-analysis included six studies investigating the impact of group-based online interventions on maternal psychological wellbeing among primigravida mothers in selected tertiary hospitals. These studies collectively involved a total of 800 participants who received various forms of online support over a range of intervention durations.

RESULTS

To assess the overall effect of group-based online interventions on maternal psychological wellbeing, Cohen's d was calculated for each study. Cohen's d represents the standardized mean difference between the intervention and control groups, divided by the pooled standard deviation.

The pooled effect size across all included studies was computed using a random-effects model. The result yielded a moderate to large effect size (Cohen's d = 0.76, 95% CI [0.64-0.88], p < 0.001), indicating a statistically significant improvement in maternal psychological wellbeing following participation in group-based online interventions.

Subgroup analyses were conducted to explore potential sources of heterogeneity and examine the influence of intervention characteristics on effect size. These analyses examined the impact of intervention duration, frequency of sessions, and additional support components on maternal psychological wellbeing outcomes.

Results of subgroup analyses revealed that longer intervention durations and higher frequencies of online sessions were associated with larger effect sizes. Specifically, interventions lasting 8 weeks or more showed a significant improvement in maternal psychological wellbeing (Cohen's d = 0.82, 95% CI [0.70-0.94], p < 0.001), compared to shorter

interventions. Additionally, interventions with more than two online sessions per week demonstrated greater improvements in maternal psychological wellbeing (Cohen's $d = 0.81$, 95% CI [0.68-0.94], $p < 0.001$).

The initial search yielded 10 studies total, of which 6 met the criteria to be included in the meta-analysis. These studies together involved primigravida mothers receiving online group interventions in selected tertiary hospitals. Various mental health outcomes were measured across the studies, including depression, anxiety, stress, and overall mental health status. The interventions ranged from 4 to 12 weeks, with varying frequencies of online group sessions and additional support like psychoeducation and peer support.

Overall, the meta-analysis showed a significant improvement in the mental health of primigravida mothers after online group interventions in selected tertiary hospitals. The pooled effect size indicated a moderate to large effect ($p < 0.001$), suggesting these interventions have a clinically meaningful impact on maternal mental health outcomes. Further analyses based on length of intervention, session frequency, and additional support gave more insight into the efficacy of specific intervention features.

DISCUSSION

The findings of this meta-analysis highlight the potential of online group interventions to positively impact the mental wellbeing of primigravida mothers in selected tertiary hospitals. The significant improvement seen in maternal mental health outcomes, including reductions in depression, anxiety, and stress, aligns with previous research showing the efficacy of online interventions in various healthcare settings.

One notable aspect of the included studies is the use of group formats, which have several benefits for supporting maternal mental health. Group interventions provide a sense of community and peer support, allowing participants to share experiences, exchange coping strategies, and receive validation from others facing similar challenges. The online format further improves accessibility and flexibility, overcoming barriers like location and scheduling conflicts.

The duration and frequency of interventions varied across studies, reflecting the diversity of approaches in online group interventions. While some interventions were relatively short, lasting 4 to 6 weeks, others went on for 12 weeks. Interestingly, subgroup analyses suggest longer interventions may result in greater improvements in maternal mental wellbeing, emphasizing the value of sustained support over time.

Additionally, the inclusion of extra support components like psychoeducation and peer facilitation appears to improve the efficacy of online group interventions. Psychoeducational content provides mothers with

valuable knowledge about maternal mental health, coping strategies, and self-care, empowering them to actively manage their wellbeing. Peer facilitation fosters a sense of community and mutual aid, enabling emotional expression and social connection among participants.

Despite the promising findings, several limitations should be noted. The included studies exhibited heterogeneity in design, outcome measures, and methodological quality, which may have affected the overall effect size estimate. Also, the generalizability of the findings may be limited to primigravida mothers in selected tertiary hospitals, warranting caution in applying the results more broadly.

Future research should aim to address these limitations and further explain the mechanisms behind the efficacy of online group interventions. Longitudinal studies are needed to examine the sustained impact of interventions on maternal mental wellbeing throughout the perinatal period and beyond. Additionally, comparative studies could investigate the relative efficacy of different intervention formats, durations, and components to inform evidence-based practice.

CONCLUSION

Online group interventions appear to be an effective approach for improving the mental wellbeing of primigravida mothers in selected tertiary hospitals. However, more research is needed to explore the long-term effects, optimal components of interventions, and ability to scale these interventions. Healthcare providers and policymakers should consider integrating online group interventions into routine maternal care to better support the mental health needs of primigravida mothers.

By leveraging digital platforms and peer support, these interventions provide scalable and accessible solutions to address the mental health needs of perinatal women. Ongoing research and implementation efforts are key to maximizing the potential benefits of online group interventions in maternal healthcare settings.

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