

**A PILOT STUDY TO EXAMINE THE IMPACT OF GROUP BASED ONLINE INTERVENTION ON MATERNAL PSYCHOLOGICAL WELLBEING AMONG PRIMIGRAVIDA MOTHERS IN SELECTED TERTIARY HOSPITALS AT COIMBATORE**<sup>1</sup>\*M. Mumtaz, <sup>2</sup>Dr. Sampornam W. and <sup>3</sup>Dr. P. Padmavathi<sup>1</sup>PhD Nursing Scholar, Department of Maternal Health Nursing, The Tamil Nadu Dr. M.G.R. Medical University, Chennai, Tamil Nadu, India.<sup>2</sup>Principal, Department of Mental Health Nursing, Bhavani College of Nursing, Erode, Tamil Nadu, India.<sup>3</sup>Principal, Department of Maternal Health Nursing, Dhanvantri College of Nursing, Namakkal, Tamil Nadu, India.**\*Corresponding Author: M. Mumtaz**

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**ABSTRACT**

**Context:** Pregnancy and the transition to parenting is a time of rapid physiological, psychological, and social change, which can be challenging and stressful for mothers. **Aim:** This pilot study aims to compare the impact of group based online intervention on maternal psychological wellbeing between experimental group and control group. **Methods:** Pretest was conducted in person during antenatal visit. All 16 subjects were interviewed before intervention by assessing demographic variables. Maternal psychological wellbeing was assessed by using Warwick Edinburgh Mental Wellbeing Scale, Pregnancy Related Anxiety Scale (PRAS) & Multidimensional Scale of Perceived Social Support (MSPSS). Subjects with mild-moderate pregnancy related anxiety symptoms were selected and enrolled in this study. Experimental group received group based online intervention, intervened on weekly basis, for the duration of 30 minutes for the period of 6 weeks. Control group received standard methods of care. Posttest was conducted in person at the end of 2nd week after delivery, by using the same assessment techniques in experimental group & control group. **Results:** From the pilot study findings, it can be concluded that administration of group based online intervention improves the psychological wellbeing among primigravida mothers.

**KEYWORDS:** Group Based Online Intervention, Maternal Psychological Wellbeing, Primigravida Mothers.**INTRODUCTION**

Pregnancy and the transition to parenting is a time of rapid physiological, psychological, and social change, which can be challenging and stressful for mothers. International research shows that the antenatal period can be associated with increased distress and elevated psychological vulnerability, leaving women susceptible to mental health difficulties—that is, symptoms that cause significant distress and impair functioning (American Psychiatric Association, 2013).

Research has indicated that risk factors for poor mental health during pregnancy include past personal or family history of psychiatric illness or substance abuse, past personal history of sexual, physical or emotional abuse, current exposure to intimate partner violence or coercion, current social adversity and coincidental adverse life events. Psychological disturbances during pregnancy are associated with inadequate antenatal care, low-birth weight and preterm delivery (Veena A. Satyanarayana,

2011).

A new study suggests that a mother's psychological wellbeing can affect her baby's telomere biology, which in turn has far reaching effects on child development. Telomeres are protective end-structures at the tail end of chromosomes. The shortening of telomeres can potentially lead to maladaptive cellular changes, block cell growth and impair tissue replenishment (Glenn Verner, Elissa Epel, 2020).

Internet support groups often have high levels of adherence but minimal data supporting efficacy as a treatment for depression. Taken together, these findings suggest that combining the treatment components of individual interventions with the support provided by an internet support group might create an intervention with the scalability and cost-effectiveness of an individual intervention and the better outcomes typically found in supported interventions (Jennifer Duffecy, etal, 2019).

### Methods

Prior to the collection of data, permission was obtained from the concerned authority in selected tertiary hospitals at Coimbatore. After obtaining written informed consent, primigravida mothers who fulfilled the inclusion criteria was recruited and enrolled in this study by using purposive sampling technique. Study subjects were assigned randomly to either experimental group I (n=75) or experimental group II (n=75). True experimental randomized with control group design was used in this pilot study.

Pretest was conducted in person during antenatal visit. All 16 subjects were interviewed before intervention by assessing demographic variables. Maternal psychological wellbeing was assessed by using Warwick Edinburgh Mental Wellbeing Scale, Pregnancy Related Anxiety Scale (PRAS) & Multidimensional Scale of Perceived Social Support (MSPSS). Subjects with mild-moderate pregnancy related anxiety symptoms were selected and enrolled in this study. Experimental group received group based online intervention, intervened on weekly basis, for the duration of 30 minutes for the period of 6 weeks.

**Table 1: Group based online intervention sessions were as follows.**

| Sessions  | Group based interventions  | Week, Duration   |
|---|--|--|
| <b>Session –I<br/>Introduction and<br/>Explaining the Study<br/>Procedure</b> | <ul style="list-style-type: none"> <li>• Introduction to the online intervention programme.</li> <li>• Establishing a trust worthy relationship with the mothers.</li> <li>• Explaining the structure of online intervention like number of sessions, duration and general instructions.</li> </ul>  | During the first week, immediately after pretest introduction & creating trust worthy relationship given for 30-45 minutes |
| <b>Session –II<br/>Maternal Psychological<br/>Well being</b>                  | <ul style="list-style-type: none"> <li>• Physical and Psychological change during the pregnancy will be introduced and the effects of these changes on Maternal Mental Status.</li> <li>• Primigravida mothers made to recognize the physical and psychological changes during pregnancy and its symptoms such as               <ul style="list-style-type: none"> <li>➤ Breasts changes</li> <li>➤ Congestion</li> <li>➤ Frequent urination..</li> <li>➤ Mouth and tooth changes.</li> <li>➤ Aches and pains.</li> <li>➤ Shortness of breath.</li> <li>➤ Constipation.</li> <li>➤ Heartburn and gas.</li> <li>➤ Leg cramps.</li> </ul> </li> <li>• Discussing about the impact of Maternal Mental Status on the fetal wellbeing.</li> </ul> | During the second week, Recognizing the stress and its symptoms rendered for 30-45 minutes                                 |
| <b>Session –III<br/>Focus on Automatic<br/>Thoughts</b>                       | <ul style="list-style-type: none"> <li>• Introduction to one's thoughts and feelings about pregnancy.</li> <li>• Encourage mothers to identify both positive and negative thoughts.</li> <li>• Discussing about the effects of thoughts on feeling sound support and the effective factors.</li> <li>• Giving assignments on writing down the negative thoughts and the sources of automatic thought</li> </ul>  | During the third week, Focused Breathing & Relaxation Response Training rendered for 30-45 minutes                         |
| <b>Session –IV<br/>Expressing Fear and<br/>Concern</b>                        | <ul style="list-style-type: none"> <li>• Sharing attitudes about the fears, caused by pregnancy based on the Socratic Method and providing helpful insight into those worries.</li> <li>• Teaching the Relaxation and Breathing Exercises.</li> <li>• Coping strategies to help combat stress and anxiety via guided imagery.</li> </ul>   | During the fourth week, coping via guided imagery rendered for 30-45 minutes   |
| <b>Session –V<br/>Positive Activities During<br/>Pregnancy</b>                | <ul style="list-style-type: none"> <li>• Discuss the importance of planning positive activities during pregnancy.</li> <li>• Provides solutions for further compliance with changes during pregnancy and improving the compliance process with changes such as proper nutrition, personal health, increased confidence, religious belief.</li> <li>• Proving pregnancy related exercise tips and relaxation techniques.</li> </ul>   | During the fifth week, relaxation techniques were rendered for 30-45 minutes   |
| <b>Session –VI</b>  | <ul style="list-style-type: none"> <li>• Discuss about maintaining the healthy relationship with the</li> </ul>  | During the sixth week,   |

|                      |  |  |
|----------------------|--|--|
| Healthy Relationship | partner, family and relatives. <ul style="list-style-type: none"> <li>• Asking help when needed and to set boundaries to avoid overwhelming.</li> <li>• Informing the families of the importance of their role in increasing pregnant women mental health and supporting them during pregnancy.</li> </ul> | Training coping by using humours and explaining the advantages of social support given for 30-45 minutes |
|----------------------|--|--|

Control group received standard methods of care. Posttest was conducted in person at the end of 2<sup>nd</sup> week after delivery, by using the same assessment techniques in experimental group & control group.

## RESULTS

### Description of Samples Characteristics

#### Experimental group

Distribution of Primigravida mothers according to their age group shows that 50% of them were 20-25 years, 37% were 26-30 years and 13% of primigravida mothers were between 31-35 years. Majorities 37% of the Primigravida mother's education level were secondary school, 25% were primary school, 25% were higher secondary school level, 13% were university level and none of them were under illiterate. According to the occupation, 50% were not working, 25% were working in private and 12% of them were government employee and another 13% were self-employed. Family monthly income showed highest percentage 50% family income was > or equal to 10,001-20,000 and 25% belong to the income group of Rs.20,001- 30,000 and 25% were more than or equal to 30,001, and none of their family income was equal or less than 10,000. With regard to religion a majority 50% belongs to Hindus, 37% were Muslims, 13% were Christians and none of them were belonging to others category. Highest percentages (75%) were living in nuclear family and 25% were from joint family and none of them in extended family. With regard to the residential area a majority 75% are living in urban area and 25% are living in rural area. With regard to nature of work 37% were sedentary workers 50% were moderate workers and 13% were heavy workers. For majority 62% of Primigravida mothers were having only one supportive person, 25% are having 2 members and 13% having 3 or more and none of them are without support persons. With regard to partner support a majority 50% were good, 12% were bad and 38% were neutral. With regard to gestational age 50% primigravida mothers were in gestational age of 28 weeks, 25% in 29 weeks and another 25% were in 30 weeks. All 100% primigravida mothers were planned pregnancy. A majority 88% of primigravida mothers has no history of medical illness and 12% of mothers have an history of medical illness. Regarding dietary pattern 88% of mothers were non-vegetarian and 12% of mothers were vegetarian.

#### Control group

Distribution of Primigravida mothers according to their age group shows that 38% of them were 20-25 years, 50% were 26-30 years and 12% of primigravida mothers were between 31-35 years. 38% of the Primigravida mother's education level is higher secondary school,

25% were secondary school and 25% were university level, 12% were primary school level and none of them were under illiterate. According to the occupation, 62% of them were not working and 25% were working in private, 13% were self- employed and none of them were government employee. With regard to family monthly income majority 50% was > or equal to 10,001-20,000 and 25% belong to the income group of Rs.20,001-30,000 and 25% were more than or equal to 30,001 and none of their family income were equal or less than 10,000. With regard to religion a majority 38% belongs to Hindus, 25% were Muslims, 37% were Christians and none of them were belonging to others category. 50% were living in nuclear family and 50% were from joint family and none of them in extended family. With regard to the residential area a majority 63% were living in urban area and 37% were living in rural area. With regard to nature of work 50% were sedentary, 50% were moderate workers and none of them were heavy workers. 50% of Primigravida mothers were having only one supportive person and another 50% were having 2 supportive person, none were having 3 or more and also none of them were without support persons. With regard to partner support majorities 50% were good, none were bad and 50% were neutral. All primigravida mothers (100%) pregnancy was planned. Majorities 75% of primigravida mothers have no history of medical illness and 25% of mothers have a history of medical illness. Regarding dietary pattern, all 100% of mothers were vegetarian and none of mothers were non vegetarian.

#### Level of Maternal Psychological Wellbeing among Primigravida Mothers

In pre- test, experimental group showed 62% with low level of mental wellbeing, 38% with medium level and none of them were with high level of mental wellbeing. In post-test, none of them experienced low level of mental wellbeing, 50% of subjects showed medium level and 50% of the subjects had high level of mental wellbeing. In pre- test, control group showed 62% with low level of mental wellbeing, 38% with medium level and none of them had high level of mental wellbeing. In post- test, 50% experienced low level of mental wellbeing, 50 % of subjects showed medium level and none of the subjects had high level of mental wellbeing.

Frequency and percentage distribution of pre-test level of pregnancy related anxiety in experimental group showed 12% were mild, 38% were moderate and 50% of the subjects reported severe pregnancy related anxiety. In post-test 38% of the subjects reported mild level of pregnancy related anxiety 50% showed moderate and 12% showed severe level of pregnancy related anxiety.

Frequency and percentage distribution of pre- test level of pregnancy related anxiety in control group showed 12% were mild, 50% were moderate and 38% of the subjects reported severe pregnancy related anxiety. In post-test 12% of the subjects reported mild level of pregnancy related anxiety 63% showed moderate and 25% showed severe level of pregnancy related anxiety.

Frequency and percentage distribution of pre-test level of Perceived social support in experimental group showed 37 were low, 63% were medium and none of the subjects reported high Perceived social support. In post-test none of the subjects reported low level of Perceived social support 67% showed medium and 33% showed High level of Perceived social support. Frequency and percentage distribution of pre-test level of Perceived social support in control group showed 37% were low, 63% were medium and none of the subjects had high level of Perceived social support. In post-test 25% of the subjects had low level of Perceived social support 75% had medium and none of them had high level of Perceived social support.

#### **Effectiveness of group based online intervention on Maternal Psychological Wellbeing among primigravida mothers**

The mean scores in experimental group increased in the post test and showed significant improvement in level of mental wellbeing comparatively to the control group among the primigravida mothers. The Paired t- test value level of mental wellbeing showed statistical significance in experimental group compared to control group (Table 2).

The mean scores in experimental group increased in the post test and showed significant decrease in level of pregnancy related anxiety comparatively to the control group among the primigravida mothers. The Paired t- test value of level of pregnancy related anxiety scores showed statistical significance in experimental group compared to control group (Table 2).

The mean scores in experimental group increased in the post test and showed significant increase in level of perceived social support comparatively to the control group among the primigravida mothers. The Paired t- test value of level of perceived social support scores showed statistical significance in experimental group compared to control group (Table 2).

Unpaired t- test calculated to determine the effectiveness of group based online intervention on the level of mental well being, pregnancy related anxiety and perceived social support among primigravida mothers in both experimental and control group. The level of mental well being, pregnancy related anxiety and perceived social support showed that there was a significant difference between experimental and control group. Hence, it can be concluded that there is significant difference between the post test score on the level of mental well being, pregnancy related anxiety and perceived social support among primigravida mothers (Table 2).

**Table 2: Effectiveness of group based online intervention on Maternal Psychological Wellbeing among primigravida mothers.**

N=16 (n1=8, n2=8)

| Maternal psychological wellbeing          | Group                        | Mean | SD  | Significance of Paired t- test | Significance of Unpaired t- test                |
|---|------------------------------|------|-----|--------------------------------|---|
| <b>Level of Mental wellbeing</b>          | Experimental Group Pre-test  | 43.7 | 9.7 | t=6.1*<br>p<0.05               | <b>Experimental and Control Group Post-test</b> |
|   | Experimental Group Post-test | 60.1 | 8.3 |                                |   |
|   | Control Group Pre-test       | 43.5 | 7.1 | t=0.1<br>p<0.05                | t=4.2*<br>p<0.05                                |
|   | Control Group Post-test      | 43.8 | 6.9 |                                |   |
| <b>Level of pregnancy related anxiety</b> | Experimental Group Pre-test  | 34.9 | 8.6 | t =4.4*<br>P<0.05              | <b>Experimental and Control Group Post-test</b> |
|   | Experimental Group Post-test | 28.5 | 7.6 |                                |   |
|   | Control Group Pre-test       | 31.7 | 7.3 | t =0.05<br>P<0.05              | t=2.4*<br>p<0.05                                |
|   | Control Group Post-test      | 31.4 | 7.2 |                                |   |

|  |                              |      |     |                   |   |
|--|------------------------------|------|-----|-------------------|---|
| <b>Level of perceived social support</b> | Experimental Group Pre-test  | 40.9 | 7.5 | t =14.3<br>P<0.05 | <b>Experimental and Control Group Post-test</b> |
|  | Experimental Group Post-test | 62.9 | 6   |                   |   |
|  | Control Group Pre-test       | 40.1 | 8.1 | t =0.03<br>P<0.05 | t=6.0*<br>p<0.05                                |
|  | Control Group Post-test      | 40.3 | 7.8 |                   |   |

Level of Significance:  $p < 0.05$

#### **Association between post-test level of mental-wellbeing scores and selected demographic variables among primigravida mothers in experimental & control group**

Association between post-test level of mental wellbeing and selected demographic variables among primigravida mothers in experimental & control group reveals that there was no significant association between age, occupation, education, religion, family monthly income, nature of work, gestational age and partner support.

#### **Association between post-test level of pregnancy related anxiety scores and selected demographic variables among primigravida mothers in experimental & control group**

Association between posttest level of pregnancy related anxiety scores and selected demographic variables among primigravida mothers in experimental group reveals that there is a significant relationship between pregnancy related anxiety scores and nature of work of the mother and there was no significant association between age, occupation, education, religion, family monthly income, gestational age and partner support. Association between posttest level of pregnancy related anxiety scores and selected demographic variables among primigravida mothers in control group reveals that there was no significant association between age, occupation, education, religion, family monthly income, nature of work, gestational age and partner support.

#### **Association between post-test level of perceived social support scores and selected demographic variables among primigravida mothers in experimental & control group**

Association between post-test perceived social support scores and selected demographic variables among primigravida mothers in experimental & control group reveals that there was no significant association between perceived social support and age, occupation, education, religion, family monthly income, nature of work, gestational age and partner support.

#### **DISCUSSION**

Pilot study was executed to check the feasibility and time requirement of the study. From the pilot study findings, it can be concluded that administration of group based online intervention improves the psychological wellbeing among primigravida mothers. The findings of this pilot study were supported by Jennifer Duffecy (2019), who

conducted a study describing the development of a cognitive behavioral therapy (CBT) web-based intervention with peer support to prevent postpartum depression and examining initial depression and the benefits of using it. Network. User-centered design teams are used to design network interfaces. When the intervention was implemented, women who were 20 to 28 weeks pregnant and had symptoms of depression (Patient Health Questionnaire 8 points 5–14) but were not diagnosed with major depression were enrolled in a randomized controlled trial (RCT) to compare 8 sessions of CBT based on Internet intervention and personal Internet intervention to prevent postpartum depression with peer support. A total of 25 women were randomized. The Patient Health Questionnaire score of 9 at week 6 postpartum was below the clinical mean for referral to treatment in both groups, and the severity score pressure showed a reduction in symptoms from baseline to postpartum. Results suggest that women respond to both support and personal online interventions to combat postpartum depression and that peer support may be an important factor in stakeholder management.

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