Effectiveness Of Happy Mom Interventions To Control Perinatal Depression

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ABSTRACT:
Perinatal depression in Indonesia is like an iceberg phenomenon. The results of the research focus more on postpartum depression which has an incidence of 10-20% in the maternal. Perinatal depression that occurs from the prenatal period can develop and continue until the postpartum period, even suicidal behavior or killing the baby. In health services for pregnant women up to postpartum, there is no specific policy or standard of care related to the treatment of maternal depression. The impact is large, but there is no standard nursing intervention to manage it. This study aims to identify the effectiveness of Happy Mom interventions on the prevention of perinatal depression. The Happy Mom Intervention is an intervention package that contains screening since pregnancy, education about preparing for motherhood starting from preparation for childbirth, maternal care after childbirth, newborn care, and about perinatal depression for 4 weeks, followed by *peer group intervention* in the postpartum period for 4 weeks. The control group received only standard care from the hospital. This study used the design of Quasy Experiment *pre-test* and *post-test with control group.* The study was conducted in four health services in the city of Bekasi, Indonesia, for 8 weeks starting from 34 weeks gestation to 1 month postpartum. The research started from early November 2023 and was completed by the end of February 2024. The research sample consisted of 88 respondents in the third trimester of pregnancy in the experimental group and 88 respondents in the control group. The results of the *Paired T-test* statistical test showed that there was a significant difference between *the mean score of Edinburgh Postnatal Depression* Scale pre and posttest of the experimental group (p-value: 0.01<0.05) and the statistical test *of the Independent T-test* showed that there was a difference in EPDS scores between the experimental group and the control group after the intervention (p-value: 0.01<0.05) with the conclusion that the Happy Mom Intervention was effective in overcoming perinatal depression. The characteristics of respondents that affected the incidence of perinatal depression included education level, employment status, socio-economic and history of domestic violence. In addition to the EPDS score, this study also shows the influence of education on the level of mothers' knowledge. Happy Mom interventions can be implemented easily, effectively and efficiently in pregnant women's health services with early screening, education on motherhood preparation and increasing social support through peer groups. Happy Mom can be used as one of the intervention options to manage perinatal depression.

1. Introduction

At the global level, more than 300 million people are estimated to suffer from depression, equivalent to 4.4% of the world's population. The estimated total number of people living with depression increased by 18.4% between 2005 and 2015. The total number of people living with depression in the world is 322 million. Nearly half of these people live in the South East Asia Region and the Western Pacific Region, reflecting the relatively larger populations of the two Regions. Depression is more common in women (5.1%) than in men (3.6%) (WHO, 2017).

The prevalence of depression in the South East Asia Region is eleven countries with the highest mental health cases. Mental health is anxiety and depression. The data also illustrates that 15% to almost 18% of depressed people experience a life disability. In terms of the number of depression events in the South East Asia Region, India is the country with the highest prevalence of depression at 4.5% of the population (56,675,969) and 10,050,411 or 15.30% of the prevalence of depression experiencing Total Years Lived with Disability. The second highest prevalence is Indonesia with 9,162,882 people with depression or 3.7% of the population and 1,547,905 or 16.89% of the prevalence of depression experiencing Total Years Lived with Disability. The third highest prevalence of depression is Bangladesh with 4.1% of the entire population (6,391,760) and 1,126,841 or 17.63% with prolonged disability.

Perinatal depression refers to depression that occurs during pregnancy and within 12 months after giving birth. In developed countries, around 10-15% of women experience perinatal depression, with higher risk in less developed countries. Globally, about 10 percent of people during pregnancy and 13 percent during early postpartum in industrialized countries will experience mental illness, especially depression. Depression can appear at different time points during pregnancy or postpartum. It may be a chronic mental illness that persists during pregnancy and postpartum, a new condition during pregnancy or postpartum, or a relapse (Registered Nurses of Ontario (RNAO), 2018).

Research has shown that nearly one-fifth of women experience depression during pregnancy. Pregnancy depression is experienced by around 10% of women worldwide, while postpartum depression is experienced by 13% of postpartum women. These data are different from the results of several studies which show the incidence of prenatal depression is higher than postpartum depression. In KwaZulu-Natal, South Africa 15.9% had prenatal depression and 8.8% postpartum depression (n=132). The same thing happened in Australia 6.2% experienced prenatal depression and 3.3%

postpartum depression (n=17,564) (Govender, Naidoo, & Taylor, 2020; Eastwood, Ogbo, Hendry, Noble, Page, & (EYRG), 2017).

Lack of knowledge about the process of pregnancy and childbirth is also one of the causes of prenatal depression. Based on the results of research on 224 pregnant women who received antenatal care and 120 of them were third-trimester pregnant women, it was found that 70% of the mothers felt afraid of their birth. Various factors can cause fear in mothers, namely the long distance between pregnancies and frightening information about childbirth that mothers receive from the surrounding environment (Baro'ah, 2019).

Lack of knowledge about the process of pregnancy and childbirth is a factor that influences the incidence of prenatal depression. Having prenatal depression also increases the risk of developing postpartum depression 6 weeks after giving birth and lack of knowledge about preparing for the role of motherhood, postpartum care, and newborn care are factors that cause postpartum depression (Shimpuku et al., 2022). A lack of knowledge about motherhood can lead to feelings of unpreparedness for various challenges, such as physical and emotional changes after childbirth, or the special needs of a child. The inability to cope with these challenges can be a significant source of stress on a mother's mental health and contribute to the development of depression. Lack of understanding of the responsibilities and challenges of parenting will overwhelm mothers handling fussy babies or managing time between work and parenting and can lead to excessive stress and anxiety which are major risk factors for depression (Duncan et al., 2017a). In addition, lack of knowledge also causes feelings of incompetence or failure in performing the role of mother. When a mother feels unable to meet expectations or responsibilities as a mother, feels ashamed or afraid of being judged, feels inferior, and hopeless, and tends to withdraw from social support, such as a mother's group or friends. This social isolation can worsen feelings of loneliness and depression (Fierloos et al., 2023).

The risk factors for perinatal depression are almost the same in every region. Prenatal depression is the most significant risk factor as a cause of postpartum depression. Based on the research results explain that most mothers who experience postpartum depression are mothers aged 20–35 years, have basic education, not working, are multiparous, low income, lack knowledge, lack family support, as well as travel time to health services with a period time of 5-15 minutes. Family support is the determinant that most influences postpartum depression. Research shows that aspects of social support and satisfaction with social support received during pregnancy, have a major influence on the failure of bonding and depression in women in the postpartum period (Nasri et al., 2017). This shows the

importance of the benefits of early intervention to provide support to pregnant women. Clinical nurses must also pay more attention to supportive and sympathetic relationships with women and provide satisfying social support during pregnancy.

Perinatal depression has been shown to have a significant impact on pregnancy outcomes. It can also have long-term effects on the mental and emotional well-being of children whose mothers experience perinatal depression. Additionally, perinatal depression in women is associated with high morbidity and mortality rates, affecting not only the individuals involved but also their families and society as a whole. Prenatal depression has an impact on the health of the mother and baby in later life, especially during labor and postpartum. The impact of anxiety and depression on labor outcomes is the potential for the risk of low birth weight and premature birth. Another impact caused is the weakening of uterine muscle contractions due to the release of the hormone catecholamine so that the production of the hormone oxytocin will be inhibited, this will have an impact on the decrease in uterine contractions during childbirth so that there is a long labor which triggers the risk of infection and fatigue in the mother (Baro'ah, 2019).

Netsi (2018) explained that 2.6% of women with moderate to severe prenatal depression survived until postpartum. The same thing happened in Bangladesh, which showed that out of 376 mothers, 148 (39.4%) had depression, and 50.3% of them had advanced depression. The impact on the child of a depressed woman includes a low APGAR score, low birth weight, a high chance of experiencing behavioral problems, low academic achievement, and a high probability of experiencing major depression at the age of 18 years (Geller et al., 2018; Geller et al., 2018).

Maternal mortality is significantly increased by perinatal mental health. Suicide is currently the second most common cause of maternal death in the United Kingdom (UK), where 23% of women who pass away during the postnatal period have a mental health illness. The negative effects of perinatal mental health disorders extend beyond the mother; they can also lead to poor pregnancy outcomes, such as low birth weight and early delivery, as well as poor mother-infant interactions that are linked to behavioral, emotional, and cognitive issues in the offspring (Fierloos et al., 2023). Maternal mental health severely affects children's and families' lives and has a significant financial and resource impact on health care. This suggests that it is important to find effective interventions to prevent and control perinatal depression. It is an indicator that treatment of perinatal depression must be done early, especially during pregnancy.

Perinatal depression significantly correlates negatively with the quality of dimensions of physical health and psychological well-being. If not handled properly, it will have a dangerous impact on the

child. Difficult interactions between mothers and their babies increase the risk of behavioral disorders and children's cognitive disorders (Fauzy & Fourianalistyawati, 2017). Perinatal depression results in both short-term and long-term adverse consequences for the person; The consequences can extend to the person's partner, family members, and social networks. Based on the description above, perinatal depression is a problem that requires nursing intervention. Depression in pregnant women will hurt the continuation of the mother's life including childbirth problems, decreased health conditions of the baby, mental health in the postpartum period to a decrease in the quality of life. These consequences make it important for nurses and interprofessional teams to have the knowledge and skills to competently screen, assess, prevent, intervene, and evaluate perinatal depression.

2. Methods

This study aims to see the effect of an intervention using quantitative research methods, with a quasi-experimental design with a pre-posttest with a control group to measure the EPDS score before and after the Happy Mom intervention. The study was conducted in four health services in the city of Bekasi, West Java, Indonesia involving 176 pregnant women in the third trimester who were divided into 88 respondents in the experimental group and 88 in the control group. In the experimental group, the Happy Mom Intervention was carried out, namely providing health education using modules for 4 weeks and Peer Groups for four weeks. Education is carried out once a week. The first week uses module I of childbirth preparation, the second week uses the maternal self-care module during the postpartum period, the third week uses the newborn care module, and the fourth week, uses the maternal depression prevention module. In the control group, only usual treatments such as giving vitamins, pregnancy checks, and administering painkillers and antibiotics by doctors are carried out. Prior to the intervention, the pretest was carried out with the Edinburgh Postnatal Depression Scale (EPDS) instrument consisting of 10 question items to assess perinatal depression, and the questionnaire of the respondents' knowledge about pregnancy consisted of 25 questions that assessed knowledge about childbirth preparation, maternal self-care during the postpartum period, newborn care and about perinatal depression. The intervention was continued with a peer group on Whatsapp for 4 weeks which consisted of sharing activities about childbirth, self-care and newborn care, and express feelings. The posttest was carried out in the fourth week of postpartum to obtain the EPDS score and the level of knowledge of the respondents after health education.

Statistical analysis used the paired T test to assess the difference between the EPDS pretest and posttest mean scores of each group and an independent T test was conducted to identify the difference in mean scores between the experimental group and the control group.

3. Results

This research has passed the ethics test with the number No: EC.309/KEPK/STKBS/X/2023.

Validity and Reliability

The results of the validity test indicated that ten

questions in the EPDS questionnaire were declared valid because the Pearson correlation value of each 2-tailed question item was greater than the r-table significant 5% level with the number of 30 respondents which was 0.361. The results of the EPDS instrument reliability test using IBM SPSS Statistics 23 showed that the Cronbach's Alpha value was >0.6, which was 0.938 for the reliability value of the EPDS instrument and 0.883 for the Cronbach's Alpha value for the knowledge instrument.

Participants

During the study, none of the respondents resigned. Sociodemographic data (table 1) shows that the majority of respondents' education levels are Secondary Education 87 respondents (49.4%), High education 61 respondents (34.7%) and respondents with basic education is 28 respondents (15.9%). The majority of respondents that out of 176 of the total respondents, 110 had multigravida parity (62.5%). The grand multipara status was very rare in the respondents, there were only 3 respondents out of 176 (1.7%) distributed in the experimental group of 2 people and in the control group of 1 person. Respondents with low economic status amounted to 76 respondents (43.2%) with an income above the regional minimum wage in the experimental group of 43 and the control group of 33. Table 1 illustrates that 160 (90.9%) respondents have never experienced domestic violence either physically or verbally with a distribution in the experimental group totaling 83 respondents and the control group 77 respondents. The respondents who experienced violence were only 16 respondents (9.1%) more than the control group (11 respondents) while from the experimental group, there were only 5 respondents. The majority of respondents (72.2%) are planning their pregnancy. Pregnancy planning in the experimental group and the control group were almost equivalent. In the experimental group 73.86 (65 respondents) and in the control group 70.45% (62 respondents). Respondents who did not plan their pregnancy amounted to 27.8% (49 respondents) from the experimental group of 23 respondents and the control group of 26 respondents.

Based on the risk of age, the majority (84.66%) are 20-35 years old, which is the age at which pregnancy is not at risk, and respondents who are less than 20 years old and over 35 years old who are at high risk of getting pregnant from the age aspect amounted to 27 respondents (15.34%). In this

study, the average age of respondents was 29.6 years with a minimum age of 17 years and a maximum of 46 years.

Incidence of Perinatal Depression

The paired T-test shows that after the happy mom intervention, there was a significant change in the average EPDS score of the experimental group. The average score of the experiment before the intervention was 10.42, decreasing to 9.18 with a standard deviation of 5.328. It was different from the control group which experienced an increase in the average EPDS score after 8 weeks from 10.83 to 12.26 with a standard deviation of 5.275.

Based on the Independent Sample Test, show that a Sig. (2-tailed) value of < 0.001 < 0.05 was obtained, so it can be concluded that there is a difference in the average EPDS score between the intervention group given the Happy Mom intervention and the control group given usual care. It can be seen in the table above that there are mean values in the post-test of the experimental group of **83.66** and **76.54** in the control post-test group. This value can be interpreted as the average EPDS of the experimental group is lower when compared to the average of the control group. From this exposure, it can be concluded if:

Therefore, it can be concluded that there is a difference in the average EPDS score in the intervention group after the Happy Mom intervention when compared to the control group that only receives usual care. The conclusion of the hypothesis above shows that the average EPDS score in the group that received the Happy Mom intervention was 8.5 while for the group that was treated as usual was 12.26.

4. Discussion

This study shows that health education interventions about motherhood preparation, starting from childbirth preparation, postpartum self-care baby care introduction to maternal depression, and providing peer group support in postpartum mothers can help reduce perinatal depression. The implementation of education using four modules through WhatsApp groups is more in demand by respondents than face-to-face education and through WordPress links. Moms are more flexible through mobile because they can be accessed anytime and anywhere.

The health educational materials provided are almost the same including preparation for childbirth, care for pregnant women, postpartum women, baby care, and maternal mental health. The majority of educational methods use digital or online, use media in the form of booklets, videos, and text messages, and only one article uses face-to-face education using PowerPoint media. The minimum intervention duration is 1 week, and the maximum is 4 months. The effectiveness of the intervention in reducing

the EPDS score or improving the mental health of the mother was not significant in the two studies, whereas 8 studies showed that there was a significant difference in the EPDS score between the intervention and control groups (Akbary, Tahereh Baloochi Beydokhti, Atefeh Dehnoalian, Mahdi Moshki, 2020; Avalos et al., 2020; Dol et al., 2022; Duncan et al., 2017b; O'Connell et al., 2021; Sanaati et al., 2018; Steardo et al., 2019). Online methods that use digital media have a more positive effect or significantly reduce perinatal depression. This is because digital media can be accessed at any time without being limited by space and time. Likewise, with the method, it is more significant to provide online education because the use of media is usually more interesting such as videos.

The implementation of peer groups is also more active using WhatsApp groups than peer groups face to face. Some of the respondents tend to be silent and not confident in expressing their feelings expressively during offline meetings, but actively ask questions and share through WhatsApp groups. The study also showed that mothers shared more and discussed their experiences caring for newborns.

The results of this study support the results of previous research which showed that online peer support can be beneficial in reducing EPDS scores in maternal. The results of previous studies showed that the intervention of providing online support through the 7cup Digital Peer-Support Platform intervention decreased EPDS scores. The findings in this study showed that there was a significant difference between the EPDS scores of the experimental group and the control group, but the difference in results with Baumel's study which stated that even though women were comfortable with the peer group, the data showed no significant difference between the group that followed Digital Peer-Support and women receiving treatment as usual (TAU) (Baumel et al., 2018).

Community-based peer support is sometimes considered a more acceptable alternative to professional support for people who feel stigmatized by their mental health difficulties. The basic premise of peer support for mental health is that peers will empathetically understand each other's situations. A mother who wants to talk about her feelings prefers peer support because she wants to talk to someone outside her social circle and she believes that women with peer experience will empathize below the position and accept without judgment (McLeish et al., 2023).

Based on the results of the literature review, peer-group implementers vary widely, and the profession that is tired often peer groups more maternal psychiatrists. However, in this study, peer groups were conducted by maternity nurses. It is recommended that all health workers must have the competence to peer group so that each treatment area can provide health services, especially in overcoming

psychological problems, it can be done immediately without having to first look for a psychiatric nurse or psychiatrist.

Both health education and peer groups are effective, low-cost, and non-pharmacological strategies to mitigate perinatal depression. Their combined use addresses both the cognitive and emotional needs of pregnant and postpartum women, making them a cornerstone of maternal mental health initiatives. However, successful implementation requires careful tailoring to the population's specific needs and barriers.

Limitations

The limitation in this study is that sampling is not done randomly. For further research, this study needs to be developed on a wider scale, for example, on a national scale using randomized controlled trials.

Conclusions

Health education that focuses on childbirth, postpartum care, and baby care is a powerful tool for reducing perinatal depression. By equipping mothers with knowledge of what to expect during labor, postpartum recovery, and baby care, such education helps reduce anxiety, build confidence, and empower mothers to navigate this challenging phase. Educational programs that address common problems, coping strategies, and self-care practices provide a sense of readiness, reducing the feelings of overwhelm and helplessness that often contribute to perinatal depression. In addition, addressing the emotional and psychological aspects of motherhood through such education promotes early recognition and management of depressive symptoms. Health education helps raise awareness among pregnant and new mothers about the symptoms, risk factors, and management of perinatal depression, empowering them to seek help and adopt coping strategies. When delivered through accessible methods, with digital resources, health education proves to be an effective prevention approach. Combined with support from health care providers, families, and communities, this can significantly improve maternal mental health outcomes.

Peer group interventions provide emotional support, reduce feelings of isolation, and foster a sense of community, which can significantly alleviate symptoms of depression. The combined approach of health education and peer support is particularly effective because it addresses knowledge gaps and emotional needs, improving maternal mental health outcomes. Regular interactions within peer groups help normalize the challenges of motherhood, offer practical advice and reduce stigma around mental health issues. These interventions, when tailored to cultural and individual needs, can increase their

impact, making them a valuable component of maternal health care programs. To maximize effectiveness, integration with professional healthcare and ongoing evaluation is encouraged.

Conflicts of Interest

All authors declare that no conflicts of interest

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Data Availability

Not applicable

Table 1. Sample characteristics (n=176)

	Experiment		Control		Total	
	(n)	%	(n)	%	(n)	%
Level of education						
High Education	39	44,4	22	25,0	61	34,66
Secondary Education	37	42,0	50	56,8	87	49,43
Basic Education	12	13,6	16	18,1	28	15,91
Parity State						
Primi gravida	35	39,77	28	31,81	63	35,8
Mutigravida	51	57,96	59	67,05	110	62,5
Grande multigravid	2	2,27	1	1,14	3	1,7
Socioeconomic						
High	43	48,86	33	37,50	76	43,20
Low	45	51,14	55	62,50	100	56,80
Violence History						
There is no violence	83	94,32	77	87,50	160	90,90
There is violence	5	5,68	11	12,50	16	9,10
Pregnancy planning						
Planning	65	73,90	62	70,45	127	72,2
Unplanning	23	26,10	26	24,55	49	27,8
Age						
High Risk	10	11,36	17	19,32	27	15,34
No Risk	78	88,64	71	80,68	149	84,66

Table 4.12 Distribution of Perinatal Depression in Bekasi City, West Java, Indonesia (N=176)

	Experiment		Control		Total	
	(n)	%	(n)	%	(N)	%
Pretest						
Depression	46	52,3	45	51,1	91	51,7
Not Depression	42	47,7	43	48,9	85	48,3
Posttest						
Depression	28	31,8	48	54,5	76	43,2
Not Depression	60	68,2	40	45,5	100	56,8

Table 3 Mean of Score EPDS Maternal Before Intervention in Bekasi City, West Java, Indonesia (N=176)

Group	Mean	Minimal	Maximum	Std. Deviation
Experiment	10.42	1	23	5.328
Control	10.83	1	26	5.275

Table 3 Mean of Score EPDS Maternal After Intervention in Bekasi City,West Java, Indonesia (N=176)

Group	Mean	Minimal	Maximum	Std. Deviation
Experiment group	8.50	1	20	3.757
Control group	12.26	1	25	5.780

Table 4 The Difference EPDS Score Among Maternals Between Before and After Happy Mom in The Intervention Group (n=88)

	Paired difference					t	df	Sig 2-tailed
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
EPDSPretestCtr - EPDSPost	-1.432	4.102	.437	-2.301	-.563	-3.275	88	.002

Table 5 Independent Sample Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Score _EPDS	Equal variances assumed	17.65	<,001	-5.12	174	<,001	-3.761	.735	-5.212	-2.311
	Equal variances not assumed			-5.12	149.37	<,001	-3.761	.735	-5.214	-2.309

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