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Meta-Analysis

Meta Analysis: The Effect of Social Support in Preventing Postpartum Depression in Postpartum Mothers

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ABSTRACT

Background: Depression is one of the contributors to the disease that is the focus of public health in the world. The most common depression is postpartum depression. The postpartum period is a period of adaptation between mother and baby to optimize bonding attachment, so they need physical, emotional, and mental support from partners, families, and socially. This study was aimed to estimate the magnitude of the incidence of postpartum depression in postpartum mothers with the influence of social and family support, with a meta-analysis of the main study conducted by previous authors.
Subjects and Method: This was a systematic review and meta-analysis with PICO, population: postpartum mothers. Intervention: strong social support. Comparison: weak social support. Outcome: postpartum depression. The articles used were obtained from several databases, namely Google Scholar, Pubmed, SpingerLink and Science Direct. Search keywords for articles were "Postnatal Depression" OR "Postpartum Depression" AND "Family Support" OR "Social Support" AND "Postpartum Mother". The inclusion criteria for research articles were full-text articles using a cross-sectional observational study design, postpartum mothers who received intervention in the form of family and social support, the results of the study were postpartum/postnatal depression, multivariate analysis with Adjusted Odds Ratio (aOR) to measure estimates effect. Data were analyzed using the Review Manager application (RevMan 5.3).
Results: A total of 10 cross-sectional articles were selected for a systematic review and meta-analysis with 8,930 postpartum mothers from Asia and Africa. Mothers giving birth without social support can contribute to the worsening of the postpartum mother's condition to cause postpartum depression (OR= 3.12; 95%CI 1.95 to 4.99; p= 0.009).
Conclusion: Social support can increase the prevention of postpartum depression in postpartum mothers.

Keywords: social support, postpartum mother, postpartum depression, postnatal depression

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BACKGROUND

Depression is one of the contributors to the disease that is the focus of public health in the world. Based on data from the World Mental Health Survey in 17 countries, it is stated that 1 in 20 people experience depression. Mentioned that depression is one of the causes of disability worldwide.

By definition, depression can be interpreted as a mental disorder that occurs due to pressure from mood, loss of interest and pleasure, reduced energy in the body, feelings of guilt, appetite, impaired concentration, and anxiety. Depressive disorders can get worse and lead to suicide (Marcus et al., 2012).

Mental health problems are a major public health problem in women of reproductive age 15 to 44 years. Mental health problems contribute to about 7% of the global disease burden. About 10% to 15% of women of childbearing age experience postpartum depression. Postpartum depression is not classified as a separate disease but is diagnosed as an affective disorder. (Giri et al., 2015). Postpartum depression can be suffered by mothers during pregnancy and after giving birth. The incidence of postpartum depression often increases during the third trimester of pregnancy and mothers after giving birth do not get physical, emotional, and mental support from their partners, parents, family, and the surrounding environment. The prevalence of postpartum depression is highest in some low-income developing countries such as Pakistan 64.6%; Bangladeshi 18%; Nigerian 24.5%; Ethiopia 24.94%; and in India there are varying research results from 9.18% to 36.7% (Sheeba et al., 2019).

Perinatal mental illness is a complication that occurs during pregnancy and after delivery. Depression during pregnancy and postpartum is divided into several categories including perinatal mental illness, perinatal depression, postpartum anxiety disorder, postpartum psychosis bipolar disorder, postpartum blues, and the distinctiveness of perinatal mental illness. The problem of perinatal mental illness is closely related to epidemiology and risk factors. In the 19th century perinatal mental illness increased, and in the 20th century research focused on prevalence, risk factors, and developmental growth in the fetus, infant, and mother (O'Hara and Wisner, 2016).

The most common depression is depression during pregnancy and postpartum. Postpartum depression can occur due to anxiety during pregnancy, poor social support, a stressful new life, and a previous history of depression. Postpartum depression is a health problem because it is often undiagnosed. Postpartum depression affects about 10% to 15% of women, making postpartum depression a public health problem that is quite affecting women and their families (Stewart et al., 2003).

Postpartum depression is a public health problem in new mothers that reaches 4% to 63.9%. Postpartum depression often occurs in the two to three weeks after giving birth and can last up to a year. The etiology of postpartum depression is a decrease in estrogen and progesterone as well as epigenetic and neuroendocrine changes. Symptoms include depression, loss of interest, lack of energy, insomnia or hypersomnia, difficulty concentrating, persistent doubts, changes in appetite, lethargy, suicidal ideation or attempts, feelings of unworthiness and guilt (Arifin et al., 2021).

The postpartum period is a period of adaptation between mother and baby to optimize the bonding attachment between them. The postpartum period is very important for mothers and babies so they need physical, emotional, and mental support from partners, families, and socially. Based on a meta-analysis, it is estimated that around 14.5% of women suffer from postpartum depression during the first 3 months postpartum. Postpartum depression if it doesn't get immediate treatment can seriously affect the mother, baby, husband, and even the whole family (El-Ibiary et al., 2013).

Based on this background, a comprehensive study is needed from various primary studies on the effect of social and family support on the prevention of postpartum depression in postpartum mothers. This study aims to estimate the magnitude of the incidence of postpartum depression in postpartum mothers with the influence of social and family support, with a meta-analysis of the main study conducted by previous authors.

SUBJECTS AND METHOD

1. Study Design

This study uses a systematic review and meta-analysis. The articles used in this study were obtained from several databases, namely Google Scholar, Pubmed, SpingerLink and Science Direct between 2012 and 2021. The selection of articles was carried out using the PRISMA flow chart. The keywords to search for articles were as follows "Postnatal Depression" OR "Postpartum Depression" AND "Family Support" OR "Social Support" AND "Postpartum Mother".

2. Inclusion Criteria

The inclusion criteria in this research article were: full-text articles using a cross-sectional observational study design, research subjects were postpartum mothers who received interventions in the form of family and social support, the results of the study were postpartum/ postnatal depression, multivariate analysis with Adjusted Odds Ratio (aOR) to measure the estimated effect.

3. Exclusion Criteria

The exclusion criteria in this research article were articles published in languages other than English, statistical results reported in the form of bivariate analysis, articles before 2012, and articles with interventions not in the form of family or social support.

4. Operational Definition of Variables

The search for articles was carried out by considering the eligibility criteria determined using the PICO model. Population: postpartum mothers. Intervention: strong family and social support. Comparison: weak family and social support. Results: postpartum/ postnatal depression.

Family/ Social Support-Based Interventions: Intervention based on family/ social support is one way to have a better mental health condition in women, especially pregnant and lactating women. Women who have good relationships with their husbands, families, and social groups experience less stress and have better mental health. In contrast, women who have poor relationships with their husbands, families and social groups are more likely to experience symptoms of depression. Several things are important factors that affect the mental health of pregnant and postnatal women, namely the husband's active support and support from extended families.

Postpartum/ Postnatal Depression: Postpartum Depression (PPD) or in other terms Postnatal Depression (PND) is depression that often afflicts mothers who have just given birth. The time of occurrence of Postnatal Depression (PND) is around 6 weeks or even up to 1 year after giving birth. Postnatal depression (PND) is often associated with the bonding attachment that exists between mother and baby, in addition to the marriage relationship with her husband and support from a large family, it is very influential on the mental health of the mother.

5. Study Instruments

The study was guided by the PRISMA flow chart and quality assessment using the Critical Appraisal Skills Program (CASP) (CASP, 2018).

6. Data Analysis

The data in the study were analyzed using the Review Manager application (RevMan 5.3). Forest plots and funnel plots were used to determine the size of the relationship and the heterogeneity of the data. The fixed effects model was used for homogeneous data, while the random effects model was used for heterogeneous data across studies.

RESULTS

The article search process is carried out through several journal databases, includeing Google Scholar, Pubmed, SpingerLink and Science Direct. The review process for related articles can be seen in the PRISMA flow chart in figure 1. Research related to the effect of social support on the risk of postpartum depression in postpartum mothers consists of 10 articles from the initial search process resulting in 1,157 articles, after the deletion process of published articles, 30 of them met requirements for further full-text review. A total of 10 articles that met the quality assessment were includeed in the quantitative synthesis using meta-analysis.

The research came from two continents, namely Asia (Malaysia and India) and Africa (Ethiopia, Nigeria, and Uganda). Table 1, the researchers conducted an assessment of the quality of the study. Table 2 shows that 10 articles from cross-sectional studies provide evidence of the relationship of the effect of social support on the risk of postpartum depression in postpartum mothers.

Based on the results of the forest plot, a cross-sectional study showed that postpartum mothers who received weak social support had a 3.12 times greater risk of postpartum depression than postpartum mothers who received strong social support (aOR= 3.12; 95%CI= 1.95 to 4.99), and the results statistically significant ($p < 0.001$). The heterogeneity of the research data shows I^2= 68% so that the distribution of the data is said to be heterogeneous (random effect model).

The funnel plot results show publication bias with an overestimation effect characterized by an asymmetric distribution between the right and left plots. There are five tiles on the right, four tiles on the left, and one tile touching the vertical line.

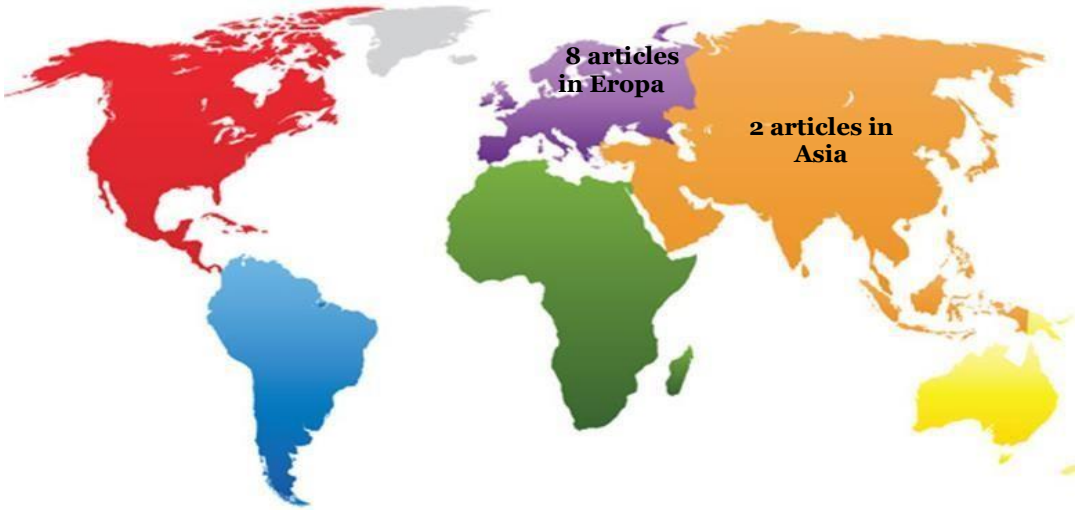

Figure 1. Map of Study Area

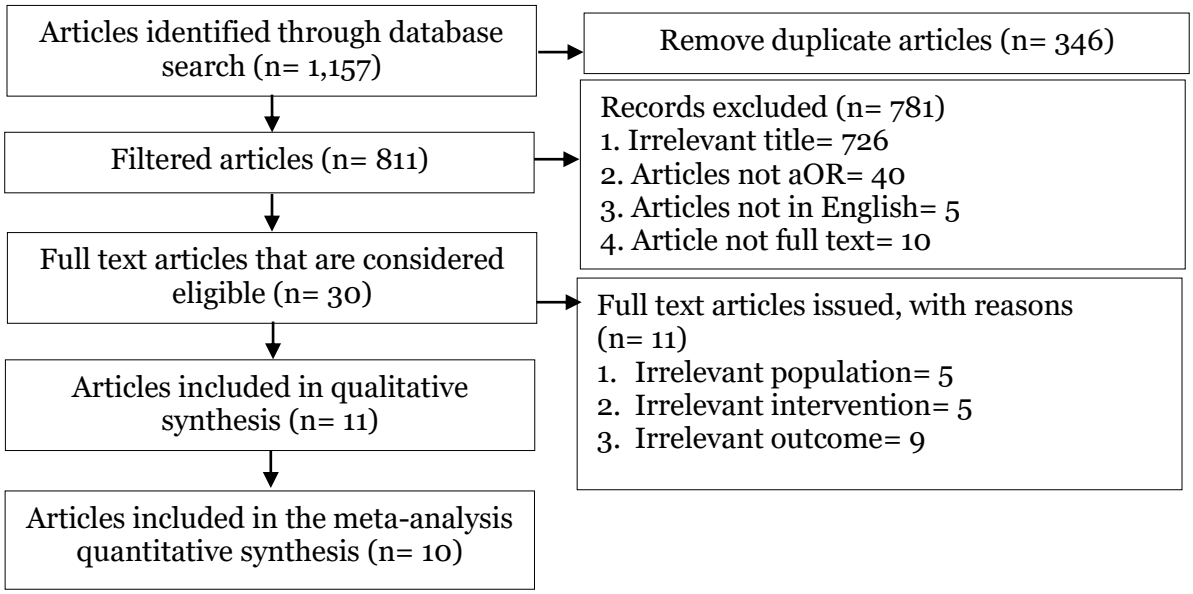

Figure 2. PRISMA flowchart

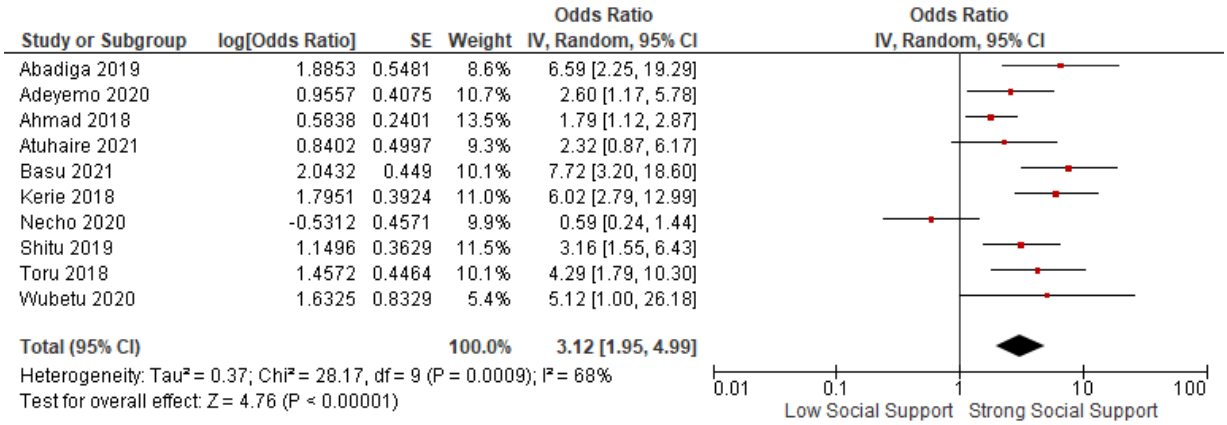

Figure 3. Forest Plot of Postpartum Depression on Postpartum Mothers with Social Support

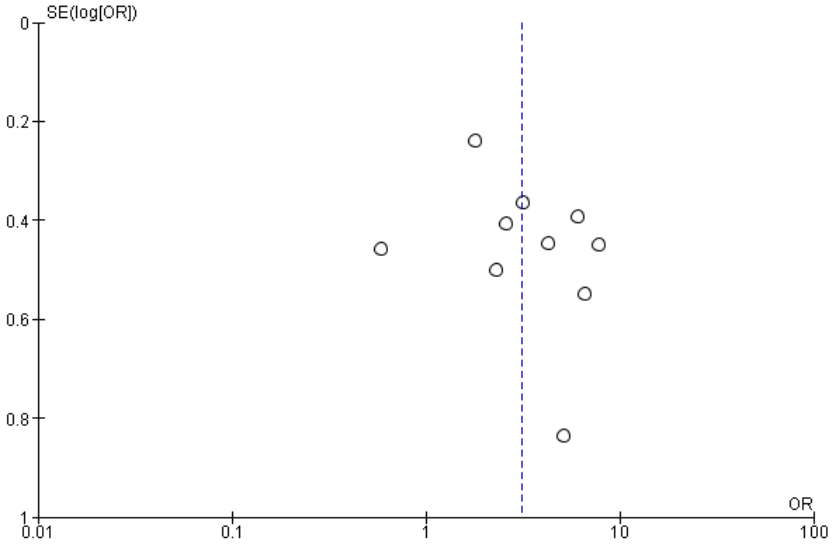

Figure 4. Funnel Plot of Postpartum Depression on Postpartum Mothers with Social Support

Table 1. Assessment of study quality by Critical Appraisal Skills Program (CASP)

No	Indicators	Publication (Author and Year)				
		Abadiga (2019)	Adeyemo et al. (2020)	Ahmad et al. (2018)	Atuhaire et al. (2021)	Basu et al. (2021)
1	Does this research clearly address the focused problem?	2	2	2	2	2
2	Was the group recruited in an acceptable way?	2	2	2	2	2
3	Is social support accurately measured to minimize bias?	2	2	2	2	2
4	Was the outcome (postpartum depression) accurately measured to minimize bias?	2	2	2	2	2
5	Did the authors identify all the important confounding factors? Have the authors considered confounding factors in the design? and/or analysis?	2	2	2	2	2
6	Was the subject follow-up complete enough? Was the follow-up of the subject long enough?	2	2	2	2	2
7	Are the results of this study reported in aOR?	2	2	2	2	2
8	What is the precision of the result?	2	2	2	2	2
9	Do you believe the results?	2	2	2	2	2
10	Can the results be applied to local residents?	2	2	2	2	2
11	Are the results of this study consistent with other available evidence?	2	2	2	2	2
12	What are the implications of this research for practice?	2	2	2		2
	Total	**24**	**24**	**24**	**24**	**24**

Description:

2: Yes; 1: Can't tell; 0: No

Table 2. Cont.

No	Indicators	Publication (Author and Year)				
		Kerie et al. (2018)	Necho et al. (2020)	Shitu et al. (2019)	Toru et al. (2018)	Wubetu et al. (2020)
1	Does this research clearly address the focused problem?	2	2	2	2	2
2	Was the group recruited in an acceptable way?	2	2	2	2	2
3	Is social support accurately measured to minimize bias?	2	2	2	2	2
4	Was the outcome (postpartum depression) accurately measured to minimize bias?	2	2	2	2	2
5	Did the authors identify all the important confounding factors? Have the authors considered confounding factors in the design? and/or analysis?	2	2	2	2	2
6	Was the subject follow-up complete enough? Was the follow-up of the subject long enough?	2	2	2	2	2
7	Are the results of this study reported in aOR?	2	2	2	2	2
8	What is the precision of the result?	2	2	2	2	2
9	Do you believe the results?	2	2	2	2	2
10	Can the results be applied to local residents?	2	2	2	2	2
11	Are the results of this study consistent with other available evidence?	2	2	2	2	2
12	What are the implications of this research for practice?	2	2	2		2
	Total	**24**	**24**	**24**	**24**	**24**

Description:

2: Yes; 1: Can't tell; 0: No

Table 3. Description of the main studies included in the primary study meta-analysis

Author (Year)	Country	Study Design	Sample	P (Population)	I (Intervention)	C (Comparison)	O (Outcome)	aOR (95%CI)
Abadiga (2019)	West Ethiopia	Cross-sectional	287	Postpartum mother	Social support	No social support	Postnatal/ Postpartum depression	6.59 (2.25 to 19.29)
Adeyemo et al. (2020)	Nigeria	Cross-sectional	250	Mother (6 weeks postpartum)	Social support	No social support	Postpartum depression	2.6 (1.17 to 5.78)
Ahmad et al. (2018)	Malaysia	Cross-sectional	5727	Mother (4-8 weeks postpartum)	Social support	No social support	Postnatal/ Postpartum depression	1.79 (1.12 to 2.87)
Atuhaire et al. (2021)	South-western Uganda	Cross-sectional	292	Mother (6- 8 weeks postpartum)	Social support	No social support	Postpartum depression	2.32 (0.87 to 6.17)
Basu et al. (2021)	India	Cross-sectional	210	Postpartum mother	Social support	No social support	Postpartum depression	7.72 (3.2 to 18.6)
Kerie et al. (2018)	Southwest Ethiopia	Cross-sectional	422	Postpartum mother	Social support	No social support	Postpartum depression	6.02 (2.79 to 12.99)
Necho et al. (2020)	Nort West Ethiopia	Cross-sectional	378	Mother (4 weeks postpartum)	Social support	No social support	Postpartum depression	0.59 (0.24 to 1.44)
Shitu et al. (2019)	Nort West Ethiopia	Cross-sectional	596	Postpartum mother	Social support	No social support	Postpartum depression	3.16 (1.55 to 6.43)
Toru et al. (2018)	Southwest Ethiopia	Cross-sectional	460	Postpartum mother	Social support	No social support	Postpartum depression	4.29 (1.79 to 10.30)
Wubetu et al. (2020)	Ethiopia	Cross-sectional	308	Mother (6 weeks postpartum)	Social support	No social support	Postpartum depression	5.12 (1.00 to 26.18)

DISCUSSION

This systematic research study and meta-analysis explains that strong social support greatly influences the incidence of post-partum depression in postpartum mothers. This study discusses social support which is considered important because it is one of the risk factors that can worsen and cause postpartum depression in postpartum mothers.

Research by El-Ibiary et al. (2013) states that postpartum mothers who are depressed get low scores on social support in the form of emotional or informational support, real support, affectionate support, and positive social support.

The strong social support received by postpartum mothers from the people around them such as partners, parents, family, friends, and the surrounding environment greatly affect the minimization of the incidence of postpartum depression in mothers after giving birth. This explanation is in line with research by Arifin et al., (2021) which states that one way to overcome postpartum depression is to create a stress coping strategy, which strategy can be structured with the help and support of partners and people around the mother. Another study stated that the weak social support that mothers received after giving birth could increase the incidence of postpartum depression (aOR= 1.79; 95% CI= 0.92 to 3.48) (Sheeba et al., 2019).

Several other studies have stated that social support such as family economic status, partner support, violence, partner's physical, and partner's psychological violence greatly affect the incidence of post-partum depression in mothers after giving birth. This is especially true for partner support during pregnancy, childbirth, and the puerperium (aOR= 6.10; 95%CI= 5.90 to 6.40) (Ogbo et al., 2018). Other studies have shown that social support, such as support from the mother-in-law, support from extended family, and infidelity by a partner, greatly influences the incidence of postpartum depression in mothers after giving birth. Moreover, extended family support was the most influential (aOR= 3.30; 95%CI= 1.57 to 6.93) (Zheng et al., 2020).

Postpartum depression is one of the events that often occurs, but without realizing it by the family and society. This is due to the lack of public knowledge regarding what postpartum depression is, what are the symptoms of postpartum depression, how to deal with postpartum depression and how to prevent postpartum depression (Marcus et al., 2012). Risk factors for postpartum depression include high life pressure, lack of social support, lack of partner support, physical and psychological violence by partners, abuse that has been experienced, and depression that has been experienced during pregnancy. So that postpartum depression has an impact on the quality of life of postpartum mothers and interferes with daily activities (Škodová et al., 2021).

Several studies say that depression is the cause of 16% of deaths in women of childbearing age. Women with symptoms of depression during pregnancy, childbirth, and postpartum have a higher percentage of self-harm and even suicide. Previous research stated that to reduce the incidence of postpartum depression in postpartum mothers, namely by providing social support from the health workers to provide health counseling and education to mothers, partners, and families before and after giving birth. This needs to be considered because the impact of postpartum depression is very dangerous, namely that it can ignore and abandon the baby (Giri et al., 2015).

As a result, as explained above, if mothers give birth if they do not get social support from their partners, parents, family, the surrounding environment, and health workers, they can contribute to the worsening of the postpartum mother's condition with life changes that can cause postpartum depression (OR= 3.12; 95%CI 1.95 to 4.99; p< 0.001). Meta-analysis of 10 articles used a cross-sectional observational study design approach with I^2= 68%. The limitations of this study are that there is a language bias because it only uses English articles and a search bias because it only uses four databases.

AUTHORS CONTRIBUTION

Meita Tyas Nugrahaeni and Niken Yuliani Untari were the main researchers who chose topics, searched and collected research data, analyzed data, and wrote research manuscripts. Nindita Arum Veibiani acts as research assistant.

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This study was self-funded.

CONFLICT OF INTEREST

There was no conflict of interest in this study.

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