Meta-Analysis: The Association between Social Support and Postpartum Depression

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ABSTRACT

Background: Postpartum depression is a mood disorder that occurs in the first year after childbirth, which affects mothers, babies and their families. The prevalence of postpartum depression is estimated to be 10-15% worldwide. Postpartum women who have weak social support are at risk for postpartum depression. This study aimd to estimate the strength of the relationship between social support and postpartum depression based on the results of previous similar studies.

Subjects and Method: This research is a systematic review and meta-analysis. Meta analysis is carried out by systematically reviewing articles published from 2010 to 2020 from the Pubmed, Google Scholar, Science Direct, and Spinger Link databases using search keywords, namely "social support" OR "family support" OR "partner support" AND" postpartum depression "OR" postnatal depression "AND" cross sectional "AND" multivariate. Article searches were carried out using PICO. The study population was postpartum women, intervention/ exposure was weak social support with comparison was strong social support and the outcome was postpartum depression. The search for articles was carried out for one month. The articles included in this study were full text articles with cross sectional design. Articles were reviewed using the PRISMA flow diagram guidelines. Articles analyzed using Revman 5.3 Software.

Results: 12 articles were reviewed in this study. This study shows that weak social support increased the risk of postpartum depression (aOR = 2.64; 95% CI: 2.08 - 3.35; p <0.001).

Conclusion: Weak social support increases the risk of postpartum depression.

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Keywords: social support, postpartum depression

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BACKGROUND

Postpartum depression is one of the main problems and not only affects the health of mothers and babies (Tambag et al., 2018) but also their partners and the whole family (Ozbasaranet al., 2011) and also society (Vaeziet al., 2018). The postpartum period causes emotional stress to new mothers, even more troublesome when accompanied by intense physical changes. There are many factors that influence the success of the transition to parenting during the postpartum period, one of which is the support factor from family and friends. Many postpartum mothers experience feelings of let down after giving birth due to the

seriousness of their experience at birth and doubts about their ability to cope effectively in raising a child (Bahiyatun, 2010).

Postpartum depression usually occurs in weeks 2 to 6 months after delivery (Fedora, 2019). The prevalence of postpartum depression is estimated to be around 10-15% worldwide (Vaeziet al., 2018). In developing countries this figure is even higher at around 19%. In Asia, the incidence of postpartum depression is quite high and varies widely, namely between 26-85% of postpartum women (Fedora, 2019). Two recent systematic reviews and meta-analyzes show that although the incidence varies by country, the global prevalence of postpartum depression is around 17% and the incidence is 12% (Shorey et al in Gomez, 2020).

Social support can be described as all moral and material support including assisting in child care, homework and emotional support provided by those close to mothers in general in stressful situations (Sahinet al in Tambag, 2018). It is important for women to get social support during childbirth and postpartum in relation to the health of both mother and baby. Social support gives a person a feeling of self-worth, psychological well-being, and allows them to access resources during stressful and transitional times in life (Tani and Castagna, 2017).

Although the risk factors for postpartum depression are considered multifactorial, the current literature has consistently identified the important role of social support in the incidence of postpartum depression. Many studies have shown that lack of social support is a risk factor for postpartum depression (Yagmur and Ulukoca, 2010). Based on the above background, there have been many studies examining the relationship between social support and postpartum depression, so

conducting a systematic review and meta-analysis is very important to do by combining several relevant studies related to social support and postpartum depression.

SUBJECTS AND METHOD

1. Study Design
This was a systematic review and meta-analysis. Meta analysis is carried out by systematically reviewing articles published from 2010 to 2020 from the Pubmed, Google-Scholar, Science Direct, and Spinger Link databases using search keywords, namely "social support" OR "family support" OR "partner support" AND "postpartum. Depression "OR" postnatal depression "AND" cross sectional "AND" multivariate.

2. Population and Sample
The study population was postpartum women. Intervention/exposure is weak social support by comparison is strong social support. The outcome was postpartum depression.

3. Inclusion Criteria
The inclusion criteria in this study are primary research conducted around the world. The research subjects were postpartum women. The articles are published from 2010 to 2020. The research design is cross sectional. The articles are in English, and the analysis is multivariate (logistic regression).

4. Exclusion Criteria
The exclusion criteria were articles that were not full text and published in Arabic, Chinese, and French, RCT, Cohort and Case-control research designs.

5. Operational Definition of Variables
Postpartum depression is depression that occurs after childbirth with symptoms including changes in sleep and diet patterns, fatigue, sadness, crying, anxiety and feelings of guilt related to the ability to care for the baby. The instrument used was a questionnaire. Social support is support

or assistance obtained from others, in the form of emotional support, information, instrumentals and assessments. The instrument used was a questionnaire.

6. Data Analysis

Data processing is done with Revman5.3 Software. The variations between each study determine the analytical model that

will be used to conclude the final meta-analysis results.

RESULTS

Search for articles from journal databases, namely Pubmed, Google Scholar, Science Direct, and Spinger Link can be seen in Figure 1:
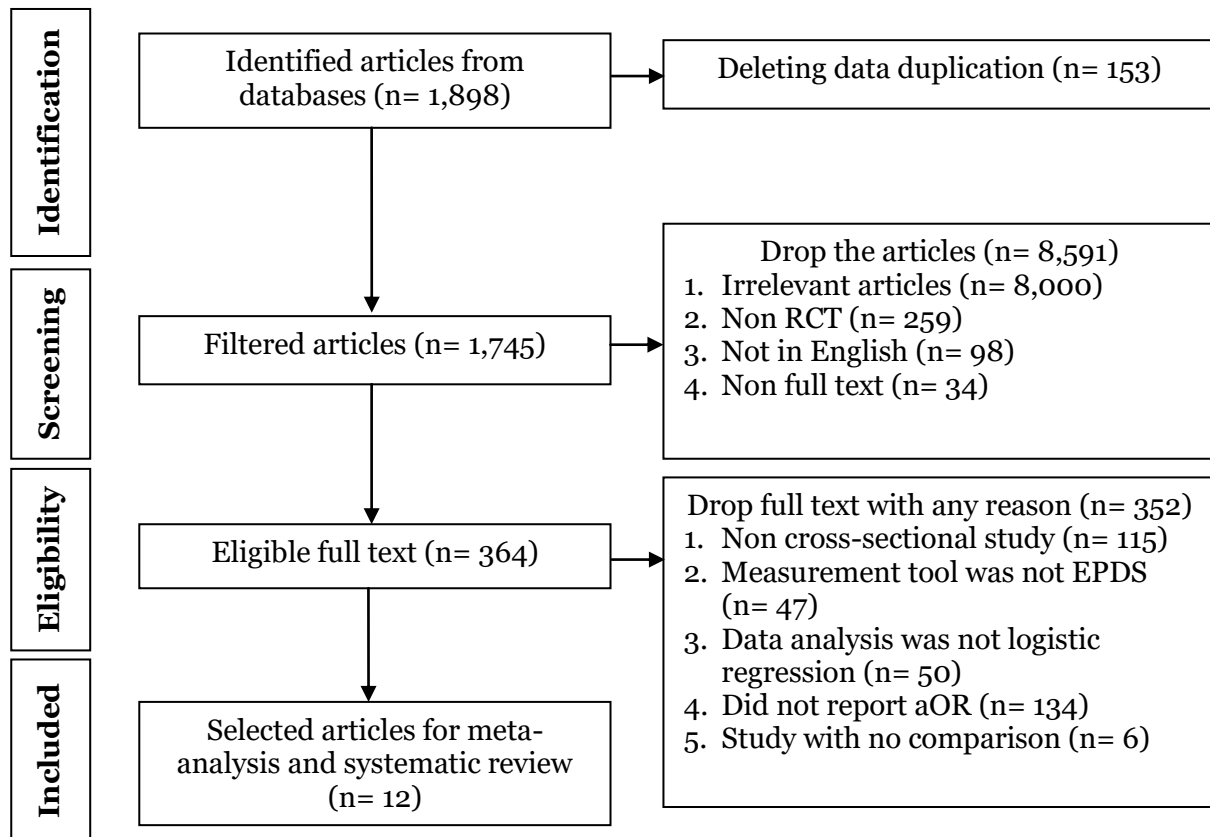
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┌─────────────────┐   ┌──────────────────────────┐   ┌──────────────────────────────────┐
│ Identification  │   │ Identified articles from │──▶│ Deleting data duplication        │
│                 │   │ databases (n= 1,898)     │   │ (n= 153)                         │
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                                    │
┌─────────────────┐                 ▼                 ┌──────────────────────────────────┐
│                 │   ┌──────────────────────────┐   │ Drop the articles (n= 8,591)     │
│   Screening     │   │ Filtered articles        │──▶│ 1. Irrelevant articles (n= 8,000)│
│                 │   │ (n= 1,745)               │   │ 2. Non RCT (n= 259)              │
│                 │   └──────────────────────────┘   │ 3. Not in English (n= 98)        │
│                 │                                   │ 4. Non full text (n= 34)         │
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│                 │   │ Eligible full text       │──▶│ Drop full text with any reason   │
│  Eligibility    │   │ (n= 364)                 │   │ (n= 352)                         │
│                 │   └──────────────────────────┘   │ 1. Non cross-sectional study     │
│                 │                                   │    (n= 115)                      │
│                 │                                   │ 2. Measurement tool was not EPDS │
└─────────────────┘                 │                │    (n= 47)                       │
                                    │                │ 3. Data analysis was not logistic│
┌─────────────────┐                 ▼                │    regression (n= 50)            │
│                 │   ┌──────────────────────────┐   │ 4. Did not report aOR (n= 134)   │
│    Included     │   │ Selected articles for    │   │ 5. Study with no comparison (n= 6)│
│                 │   │ meta-analysis and        │   └──────────────────────────────────┘
│                 │   │ systematic review (n= 12)│
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Figure 1. Flow chart of the review process

a. Social Support and Postpartum Depression

A total of 12 articles were included as a source for meta-analysis of the relationship

between social support and postpartum depression.

Table 1. Descriptions of the primary studies included in the meta-analysis.

Author (Year)	Country	Study Design	Sample	P	I	C	O
Bener, et al (2012)	Qatar	Cross sectional	1.379	Postpartum mother	Family income <1370 US $, premature baby, weak family support *, dissatisfaction in married life, poor marital relationships.	Family income> 4109 US $, normal baby, good family support *, satisfaction in married life, good marital relationship.	Postpartum Depression
Xiong, et al (2018)	China	Cross sectional	468	Postpartum mother	Unplanned pregnancy, poor relationship with mother-in-law, weak family support *, parity 1.	Pregnancy planned, good relationship with mother-in-law,	Postpartum Depression
Zeadna, et al (2015)	Israel	Cross sectional	564	Postpartum mother	Sick baby, history of emotional problems, weak husband support *, stressful events in a year, low education level (<0-9 yrs), perception of income below average, unplanned pregnancy, parity> 2.	Receive family support *, parity >1	Postpartum Depression
Ahmad, et al (2017)	Malaysia	Cross sectional	5.727	Postpartum mother	IPV exposure, unplanned pregnancy, weak family support *, partner alcohol use, low income (<1500 RM)	Infants who are not sick, have no history of emotional problems, good husband support *, have no stressful events in a year, education level (> 10 yrs), perception of above average income, planned pregnancy, parity 1.	Postpartum Depression
Nasr, et al (2020)	Saudi Arabia	Cross sectional	174	Postpartum mother	Unsupportive partner *, stressful life events, cesarean section.	Not exposed to IPV, pregnancy planned,	Postpartum Depression
Yamada, et al (2020)	Japan	Cross sectional	6.195	Postpartum mother	Lack of social support from partner / other person *, age <25 yrs and> 40 yrs, unstable financial status, unwanted pregnancy,	Good family support*, spouse does not use alcohol, income (> 3001-5000 RM)	Postpartum Depression

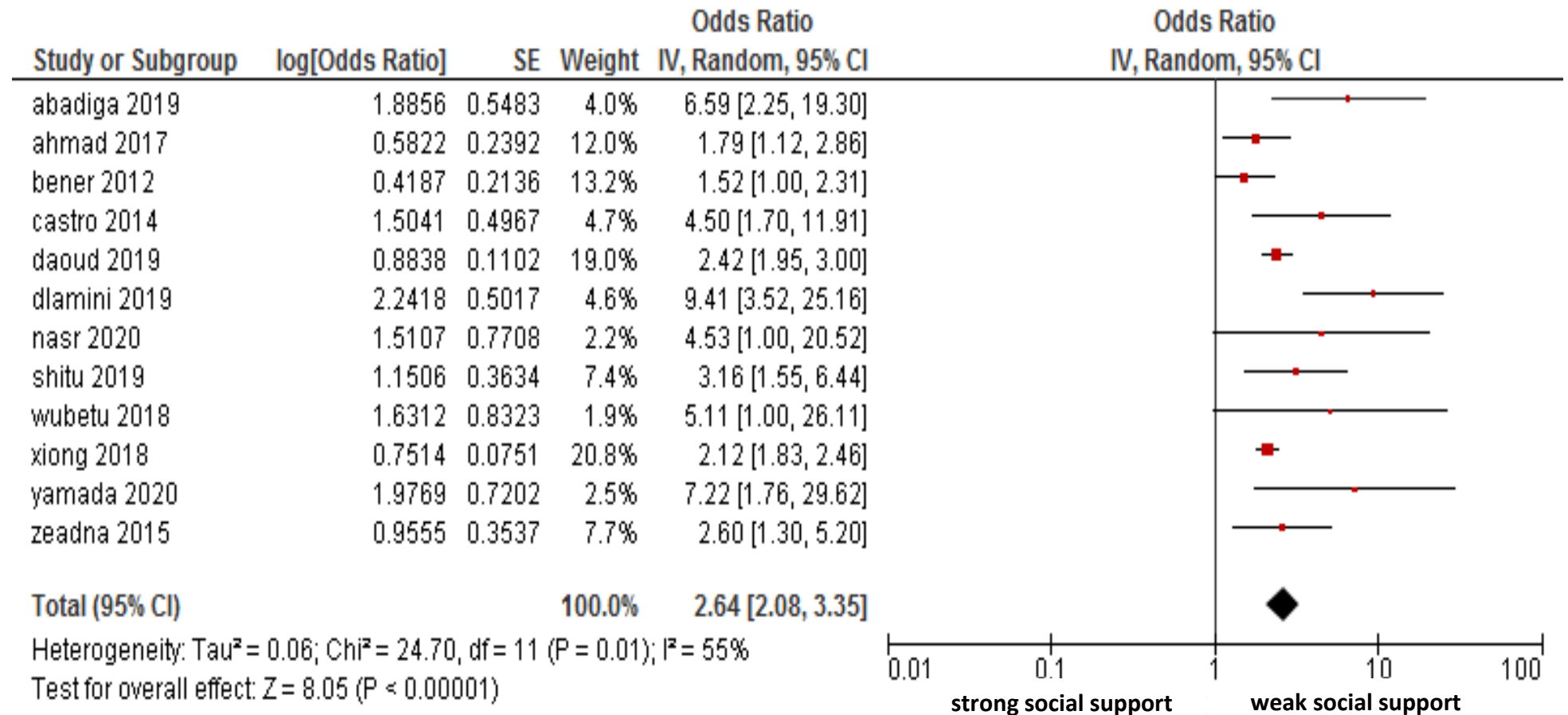|							
					unsatisfactory delivery, verbal abuse from partners, history of depression, history of mental disorders.		
Castro, et al(2014)	Mexico	Cross sectional	604	Postpartum mother	Age <20, widow, low income (<$ 2,699 pesos per month) weak social support *, history of depression, unplanned pregnancy, exposure to IPV during pregnancy.	*Supporting partner, no stressful life events, normal delivery.	Postpartum Depression
Daoud, et al (2019)	Canada	Cross sectional	74.231	Postpartum mother	Indigenous ethnicity, 15-24 years old, education	Have social support from a partner / other person *, age 25-39 years, stable financial status, desired pregnancy, satisfactory delivery, no verbal abuse from a partner, no history of depression, no history of mental disorders.	Postpartum Depression
Dlamini, et al (2019)	Eswatini	Cross sectional	114	Postpartum mother	low level, widowed / unmarried, use of antidepressants before pregnancy, weak social support *.	Age> 20, married, income >$ 2,699 pesos per month, strong social support *, no history of depression, planned pregnancy, no IPV during pregnancy.	Postpartum Depression
Abadiga (2019)	Ethiopia	Cross sectional	295	Postpartum mother	Unemployment, social support from partner weak *, attending antenatal classes <4x, unplanned pregnancy.	Ethnic immigrants, age 25-50 years, education	Postpartum Depression
Shitu, et al(2019)	Ethiopia	Cross sectional	596	Postpartum mother	Unplanned pregnancy, parity 1, history of previous depression, domestic violence, history of weak social support substance use *	Married, wanted pregnancy, infants gender, baby is not sick, strong social support *	Postpartum Depression
Wubetu, et al (2018)	Ethiopia	Cross sectional	308	Postpartum mother	Divorced / unmarried, unwanted pregnancy, unwanted gender, sick baby, weak social support *	Married, strong social support*, no children in hospital, no family members / relatives who died	Postpartum Depression

b. Forest Plot

Study or Subgroup	log[Odds Ratio]	SE	Weight	Odds Ratio IV, Random, 95% CI
abadiga 2019	1.8856	0.5483	4.0%	6.59 [2.25, 19.30]
ahmad 2017	0.5822	0.2392	12.0%	1.79 [1.12, 2.86]
bener 2012	0.4187	0.2136	13.2%	1.52 [1.00, 2.31]
castro 2014	1.5041	0.4967	4.7%	4.50 [1.70, 11.91]
daoud 2019	0.8838	0.1102	19.0%	2.42 [1.95, 3.00]
dlamini 2019	2.2418	0.5017	4.6%	9.41 [3.52, 25.16]
nasr 2020	1.5107	0.7708	2.2%	4.53 [1.00, 20.52]
shitu 2019	1.1506	0.3634	7.4%	3.16 [1.55, 6.44]
wubetu 2018	1.6312	0.8323	1.9%	5.11 [1.00, 26.11]
xiong 2018	0.7514	0.0751	20.8%	2.12 [1.83, 2.46]
yamada 2020	1.9769	0.7202	2.5%	7.22 [1.76, 29.62]
zeadna 2015	0.9555	0.3537	7.7%	2.60 [1.30, 5.20]
Total (95% CI)			**100.0%**	**2.64 [2.08, 3.35]**

Heterogeneity: Tau² = 0.06; Chi² = 24.70, df = 11 (P = 0.01); I² = 55%
Test for overall effect: Z = 8.05 (P < 0.00001)

Figure 2. Forest plot of the relationship between social support and postpartum depression

c. Funnel Plot
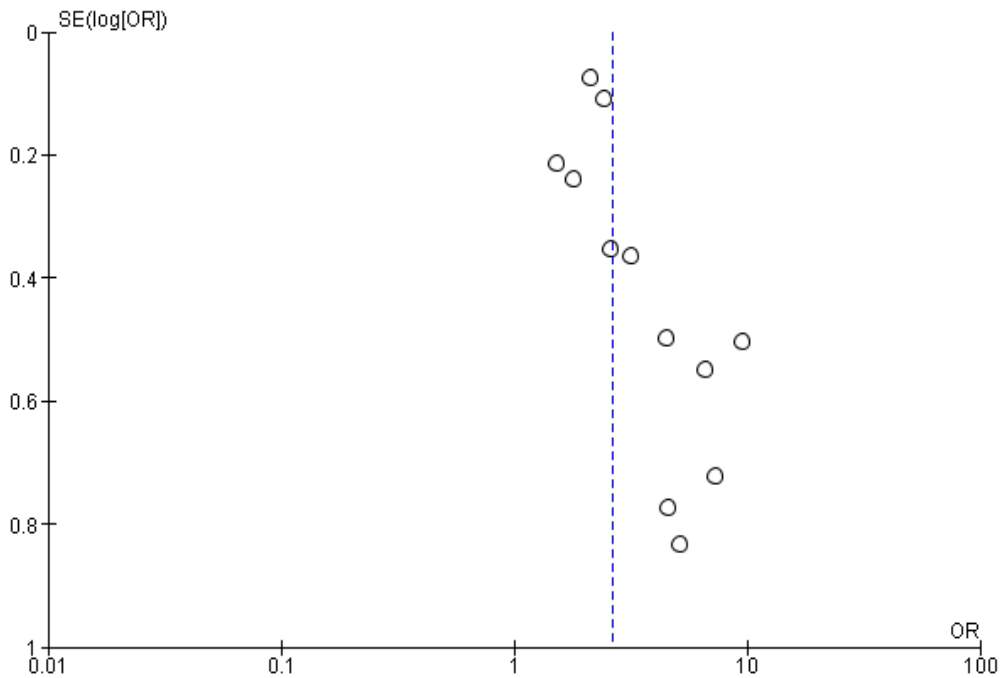
Figure 3. Funnel plot of the relationship between social support and postpartum depression

Based on the results of the forest plot in Figure 2, it shows that postpartum women who have weak social support increase the risk of postpartum depression by 2.64 times than postpartum women who have strong social support and it is statistically significant (p <0.001). The heterogeneity of the research data shows I^2= 55% so that the Forest plot display uses the Random Effect Model. The funnel plot in Figure 3 shows a publication bias which is characterized by asymmetry of the right and left plots where 7 plots are on the right and 5 plots are on the left. The plot on the left of the graph appears to have a standard error between 0 and 0.4 and the plot on the right has a standard error between 0 and 0.8.

DISCUSSION

This was a systematic review and meta-analysis. The aim of this study was to estimate the strength of the relationship between social support and postpartum depression based on a number of previous primary studies. The primary research used in this study is research that has controlled confounding factors with multivariate logistic regression analysis and the results of the study are reported in the form of Adjusted Odds Ratio (aOR). Counfonding factors must be controlled because they can influence the effect of exposure to disease events and thus invalidate the study results.

The combination of various studies was processed using Revman 5.3 software. The results of the systematic study and meta-analysis are presented in the form of a forest plot and a funnel plot. The forest plot is a diagram that shows information from each of the studies examined in the meta-analysis and estimates of the overall results. The funnel plot shows the relationship between the effect size of the study and the

sample size or standard error of the effect size of the various studies studied (Murti, 2018). A funnel plot is a diagram used to visually show possible publication bias.

Postpartum depression is a public health problem that affects maternal health and child development. This has a negative impact on the health of the mother and her ability to care for the baby. Postpartum depression can affect a mother's attachment to her baby, causing inadequate social, emotional and cognitive development of the child and can also lead to poor infant feeding practices, leading to malnutrition and sub-optimal growth of the baby.

Previous studies have found that risk factors for postpartum depression are grouped into five main groups: biological factors, including changes in hormone levels and maternal age; physical factors, including chronic health problems and antenatal depression; psychological factors, including prenatal anxiety, stress, lack of social support and a stressful life; obstetric/ pediatric factors, including unwanted pregnancy, a history of miscarriage and a severely ill baby; and socio-cultural factors, including maternal status and poverty (Giri et al., 2015).

Relationship between social support and postpartum depression

The results of a meta-analysis of 12 aggregated articles on the relationship between social support and postpartum depression are shown by the Forest plot. The forest plot in Figure 4.2 shows that postpartum mothers with weak social support have 2.64 times the risk of experiencing postpartum depression compared to mothers who have strong social support. These results were statistically significant with values (aOR= 2.64; 95% CI: 2.08 to 3.35; P: 0.00001).

The results of the study are supported by several other studies which

suggest that lack of social support is an important risk factor for postpartum depression, whereas the presence of social support can be a buffer against postpartum depression (Kim et al., 2014; Pilkington et al., 2015; Reid and Taylor, 2015; Li et al., 2017; Pao et al., 2019).

This study is in line with Xiong and Deng (2020) which states that mothers who receive weak social support are associated with the development of postparum depression. Abadiga (2019) says that a lack of husband or family support during a stressful perinatal period will make the woman feel helpless and prone to depression after childbirth. According to Vaezi et al (2018), social support reduces the stress of pregnancy, childbirth, and other stressful life events and increases the mother's self-confidence.

Another study conducted by Yamada et al (2020) states that a lack of social support from a partner or other person indicates a higher risk of postpartum depression in mothers, compared to those who receive more social support from partners or other people. Postpartum mothers who did not receive social support from both their partner and other people showed a high risk of developing postpartum depression, namely 7.2 times more likely to have postpartum depression.

Social support during the perinatal period is very important. Lack of social support makes them vulnerable to stress, loneliness and hopelessness. Postpartum women who receive partner support during the puerperium will empower them to handle household responsibilities. Moreover, it is the fact that social support plays a buffer role of stressful life events by providing resources, support, and strength during the postpartum period (Shitu et al., 2019).

AUTHOR CONTRIBUTION

CONFLICT OF INTEREST

FUNDING AND SPONSORSHIP

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