Meta Analysis: Effects of Verbal and Physical Violences on Depression in Postpartum Women

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ABSTRACT

Background: Postpartum violence can manifest in many forms, including verbal, physical, and emotional abuse, as well as inappropriate clinical practice. This study aims to analyze previous primary studies in assessing the effect of verbal violence and physical violence on the incidence of depression in postpartum women.

Subjects and Method: This study is a systematic review and meta-analysis using the PRISMA flow chart and the PICO model. Population: postpartum women. Intervention: experiencing verbal violence and physical violence. Comparison: not experiencing verbal violence and physical violence. Outcome: depression. The online databases used are PubMed, SpringerLink, Scopus and ProQuest with the keywords "Verbal Abuse" Verbal Violence" OR "Intimate Partner Violence" AND "Physical Violence" OR "Physical Intimate Partner Violence" OR "Domestic Violence" OR "Physical Abuse" AND depression OR "Post Tramumatic Stress Disorder" AND "Postpartum" AND "Cross sectional" AND "aOR". There were 12 cross-sectional studies published in 2016-2022 that met the inclusion criteria. The analysis was carried out using the Review Manager 5.3 application.

Results: Meta-analysis was carried out on 12 articles with a cross-sectional study design from Malaysia, South Africa, Japan, Brazil and Spain. The results showed that postpartum women who received verbal violence were more likely to experience depression 2.89 times than those who did not experience physical violence (aOR= 2.89; 95% CI = 1.96 to 4.25; p= 0.001) and postpartum women who received physically abused were 2.29 times more likely to experience depression than those who did not experience physical violence (aOR = 2.29; 95% CI = 1.37 to 3.83; p= 0.002).

Conclusion: Verbal violence and physical violence can affect the incidence of depression in postpartum women.

Keywords: postpartum women, verbal abuse, physical abuse, depression.

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BACKGROUND

The puerperium is the time when all female reproductive organs return to their original state as before pregnancy. The recovery process during the puerperium is called postpartum adaptation. Postpartum adaptation

consists of two physiological and psychological adaptations. Psychological adaptation in postpartum mothers begins when a mother begins to care for and take care of her baby. This is a new role and responsibility for every woman after giving birth. These new roles and responsibilities often make mothers feel insecure and experience stress (Lowdermilk et al., 2013).

Mothers feel sad and hopeless because they have not been able to care for the baby properly. This condition makes the mother more sensitive. These conditions are known as baby blues or post-partum blues. This condition appears in the first to second week after giving birth, which peaks on the third to fifth day. The incidence of postpartum blues is experienced by two-thirds of postpartum mothers. In Asia the incidence of postpartum blues reaches 26-85% while in Indonesia it ranges from 50-70% (Restyana, 2014).

WHO reported that around 99% of maternal deaths occurred in developing countries in 1994 from 95,866 deliveries there were 67 maternal deaths (69.9/ 100.00 live births), the number of deaths outside the hospital was very high at 73.3% and at home around 26.7%. Data from WHO (2018) notes that the general prevalence of postpartum blues in the world's population is 3-8% with 50% of cases occurring in the productive age of 20-50 years. WHO also says that postpartum blues disorders affect around 20% of women and 12% of men at some time in their lives (Hutagoal, 2019).

Verbal abuse can manifest in many forms, including verbal, physical, and emotional abuse, as well as inappropriate clinical practice. Pregnancy health services are provided in the form of antenatal care. Postpartum mother. Physical violence, actions that can cause pain and cause injuries in the form of minor or serious injuries. This act of violence is shown by the perpetrator by slapping, hitting, spitting, grabbing, kicking, lighting cigarettes, hitting with weapons, and so on. Antenatal care aims to maintain the health of pregnant women and their fetuses and prevent complications during pregnancy, childbirth and after delivery. Antenatal care is carried out according to standards periodically at least 4 (four) times during pregnancy and 3 times during the postpartum period by health workers who have competence and authority (Bohren et al., 2019). Based on the existing literature, a statistical summary is used to estimate the effect of verbal violence and physical violence on the incidence of depression.

Meta-analysis is a statistical combination of results from two or more separate studies, with the aim of: (1) Increasing precision; (2) Answer questions that were not discussed by previous primary studies; and (3) Addressing controversies arising from primary studies or generating new hypotheses (Deeks et al., 2021). This study aims to analyze previous primary studies in assessing the effect of verbal violence and physical violence on the incidence of depression in postpartum women.

SUBJECTS AND METHOD

1. Design Study
This study uses a systematic review method and meta-analysis with primary data from the results of previous studies. Search for articles using 4 databases, namely: PubMed, SpringerLink, Scopus and Proquest. The keywords used are Verbal Abuse" Verbal Violence" OR "Intimate Partner Violence" AND "Physical Violence" OR "Physical Intimate Partner Violence" OR "Domestic Violence" OR "Physical Abuse" AND depression OR "Post Tramumatic Stress Disorder" AND "Post-partum" AND "Cross sectional" AND "aOR". There were 12 primary studies that met the inclusion criteria of this

study.

2. Step of Meta-analysis

1) Formulate research questions in PICO. Population is postpartum women. Intervention is experiencing verbal violence and physical violence. Comparison is not experiencing verbal violence and physical violence. Outcome is depression.
2) Search for primary study research articles from 3 online databases namely Google Scholar, PubMed, and Pro-quest.
3) Conduct screening and quality assessment of primary research articles.
4) Extracting and analyzing data into the RevMan 5.3 application
5) Interpret the results and draw conclusions.

3. Inclusion Criteria

The article is a full paper that uses a cross sectional design. The analysis used is multivariate with adjusted odds ratio (aOR). The research subjects were postpartum women. The research intervention is verbal violence and physical violence.

4. Exclusion Criteria

Articles that are not in English and articles published before 2013.

5. Operational Definition of Variables

Postpartum depression is the emergence of psychological problems in a woman after giving birth and there are various kinds of potential stress during pregnancy until the delivery process. The scale used is a categorical scale.

Verbal violence is all forms of speech acts that have the nature of insulting, yelling, cursing and frightening by issuing inappropriate words. This is done continuously by the people closest to the mother which has the potential to result in psychological wounds, trauma, and depression in the mother after childbirth. Categorical scale.

Physical violence is an act that can cause pain and cause injury in the form of minor or serious injuries. This act of violence is shown by the perpetrator by slapping, hitting, spitting, grabbing, kicking, lighting cigarettes, hitting with weapons, and so on. Scale used is the categorical scale.

6. Study Instruments

The quality assessment of the main articles in this study used a critical assessment checklist for cross-sectional studies published by the Joanna Briggs Institute (JBI). The quality assessment of the main articles in this study used a critical assessment checklist for cross-sectional studies published by the Joanna Briggs Institute (JBI).

7. Data Analysis

The articles in this study were collected using the PRISMA diagram. Analyzed using the Review Manager 5.3 application by calculating the effect size and heterogeneity (I2) to form the final result of the meta-analysis. The results of data analysis are presented in the form of forest plots and funnel plots.

RESULTS

The process of searching for primary articles related to the effect of less gestational weight gain on low birth weight and small gestational age in this meta-analysis study was carried out on 4 online databases and the results obtained were 19 articles which can be seen in Figure 1 PRISMA Flow Diagram. Primary study searches in various databases resulted in a total of 5,920 articles, after the selection process, 631 articles were found that were considered suitable for full text review, 12 articles were included in the meta-analysis synthesis.

Figure 2 shows the distribution area of the 19 primary articles used in this study, namely from the Asian Continent (Indonesia, Singapore, Japan, South Korea, China, Taiwan, Lebanon and Saudi Arabia), America (United States) and Australia (New Zealand).

Table 3 presents the adjusted Odds Ratio (aOR) and 95% Confidence Interval

(95% CI) data regarding the effect of verbal violence on the incidence of depression in postpartum women.
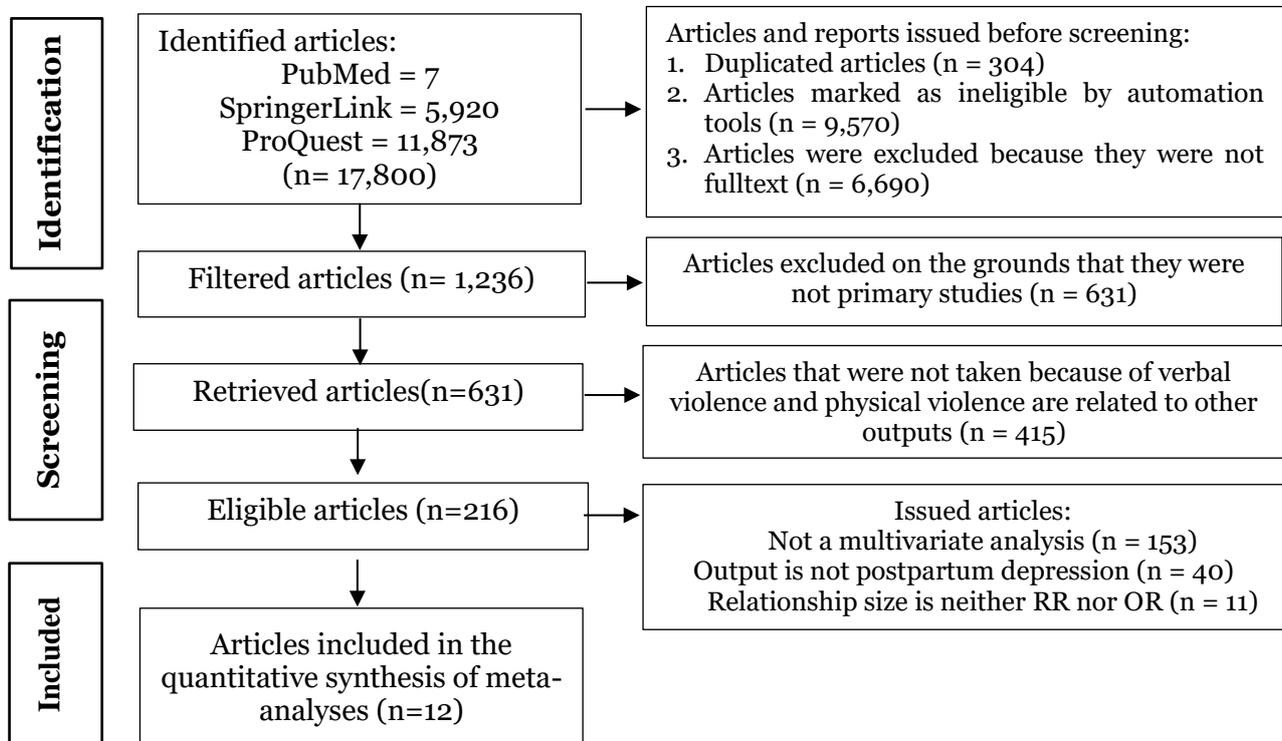
Figure 1. PRISMA 2020 flow diagram of the effect of inadequate gestational weight gain towards low birth weight and small for gestational age

Figure 2. Map of the study area on the effect of verbal and physical violence on the incidence of depression in postpartum women

Table 1. Critical Appraisal Checklist for cross-sectional studies in the meta-analysis

Article	Question of Checklist								Total
	P1	P2	P3	P4	P5	P6	P7	P8	
Abadiga et al. (2018)	2	2	2	2	2	2	2	2	16
Ahmad et al. (2018)	2	2	2	2	2	2	2	2	16
Bhusal et al. (2018)	2	2	2	2	2	2	2	2	16
Govender et al. (2020)	2	2	2	2	2	2	2	1	15
Islam et al. (2017)	2	2	2	2	2	2	2	2	16
Mahange et al. (20218)	2	2	2	2	2	2	2	2	16
Miura and Fujiwara. (2017)	2	2	2	2	2	2	2	2	16
Souza et al. (2016)	2	2	2	2	2	2	2	2	16
Vazquez et al. (2021)	2	2	2	2	2	2	2	2	16
Vazquez et al. (2021)	2	2	2	2	2	2	2	2	16
Vazquez et al. (2022)	2	2	2	2	2	2	2	2	16
Wangel (2016)	2	2	2	2	2	2	2	2	16

Question Criteria Description:
1. Are the criteria for inclusion in the sample clearly defined?
2. Were the research subjects and settings described in detail?
3. Is exposure measured in a valid and reliable way?
4. What are the standard criteria used for measuring objective conditions?
5. We're confounding factors identified?
6. Were strategies for dealing with confounding factors stated?
7. Are the results measured in a valid and reliable way?
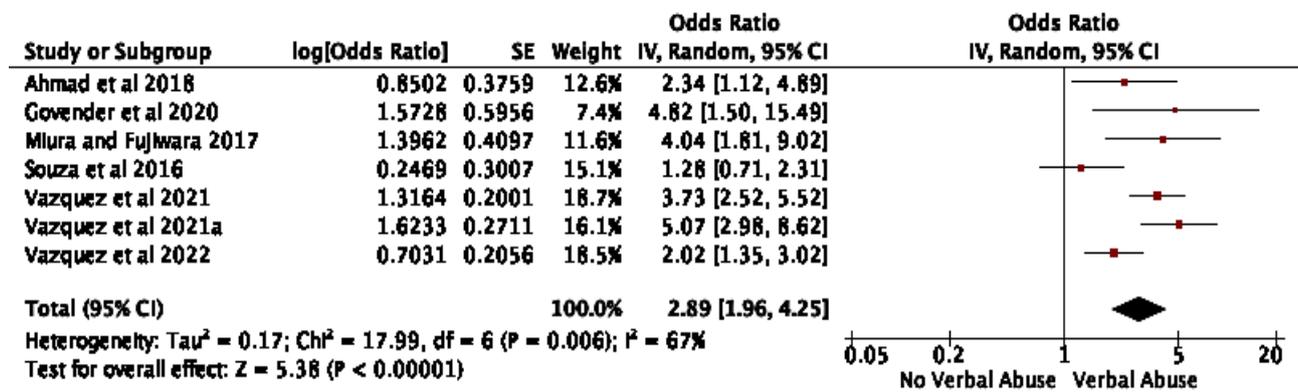8. Was proper statistical analysis used?

Answer score description: 0= no, 1= unclear, 2= Yes

Table 2. PICO table summary of cross-sectional articles from primary study sources with sample size (n = 16.057)

Author (Year)	Country	Sample	P	I	C	O
Ahmad et al. (2018)	Malaysia	5727	Postpartum women	There is verbal violence during intercourse	No verbal violence	Depression
Govender et al. (2020)	South Korea	326	Postpartum women	Receiving verbal abuse	No verbal violence	Depression
Miura and Fujiwara (2017)	Japan	6590	Postpartum women	There was verbal abuse during childbirth	No verbal violence	Depression
Souza et al. (2016)	Brazil	432	Postpartum women	There is verbal and physical abuse during pregnancy	No verbal or physical violence	Depression
Vazquez et al. (2021)	Spain	1301	Postpartum women	Experiencing verbal abuse	No verbal violence	Stress disorder
Vazquez et al. (2021)	Spain	899	Postpartum Women	There was verbal violence	No verbal violence	Stress disorder
Vazquez et al. 2022)	Spain	782	Postpartum women	There was verbal violence	No verbal violence	Depression

Table 3. Data of aOR and 95% confidence interval (95%CI) on the effect of verbal violence on the incidence of depression in postpartum women

Author (Year)	aOR	Upper Limit	Lower Limit
Vazquez et al. (2018)	3.73	2.52	5.53
Vazquez et al. (2020)	2.02	1.35	3.02
Vazquez et al. (2017)	5.07	2.98	8.63
Govender et al. (2016)	4.82	1.5	15.16
Ahmad et al. (2021)	2.34	1.12	4.87
Souza et al. (2021)	1.28	0.71	2.29
Miura and Fujiwara. (2022)	4.04	1.81	9.03

Study or Subgroup	log[Odds Ratio]	SE	Weight	Odds Ratio IV, Random, 95% CI	Odds Ratio IV, Random, 95% CI
Ahmad et al 2018	0.8502	0.3759	12.6%	2.34 [1.12, 4.89]	
Govender et al 2020	1.5728	0.5956	7.4%	4.82 [1.50, 15.49]	
Miura and Fujiwara 2017	1.3962	0.4097	11.6%	4.04 [1.81, 9.02]	
Souza et al 2016	0.2469	0.3007	15.1%	1.28 [0.71, 2.31]	
Vazquez et al 2021	1.3164	0.2001	18.7%	3.73 [2.52, 5.52]	
Vazquez et al 2021a	1.6233	0.2711	16.1%	5.07 [2.98, 8.62]	
Vazquez et al 2022	0.7031	0.2056	18.5%	2.02 [1.35, 3.02]	
Total (95% CI)			100.0%	2.89 [1.96, 4.25]	

Heterogeneity: Tau² = 0.17; Chi² = 17.99, df = 6 (P = 0.006); I² = 67%
Test for overall effect: Z = 5.38 (P < 0.00001)

No Verbal Abuse   Verbal Abuse

Figure 3. Forest plot of the effect of verbal violence on incidence of depression in postpartum women
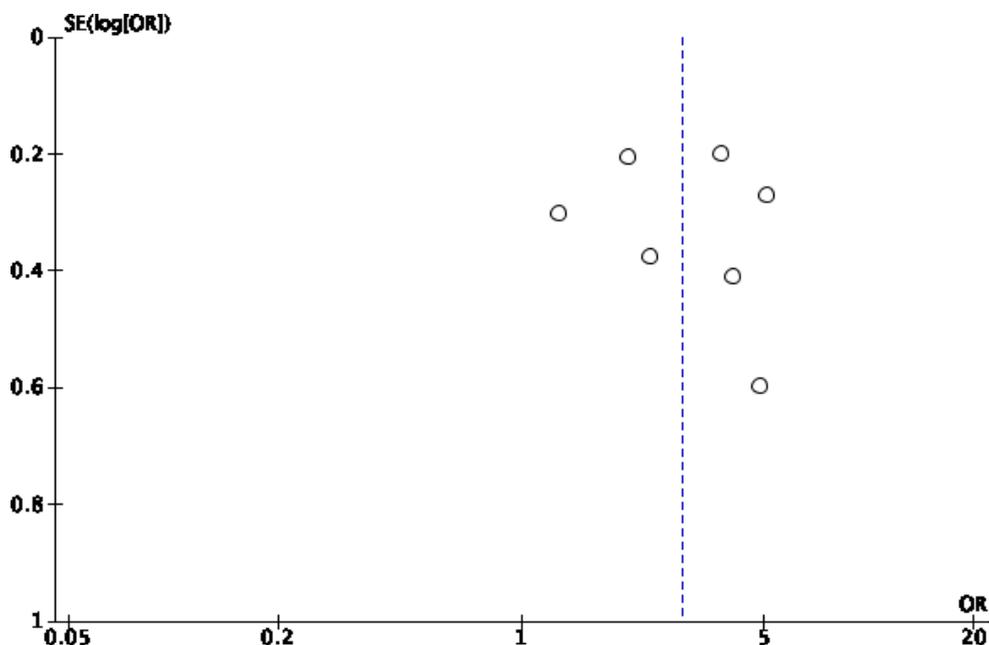
Figure 4. Funnel plot of verbal violence on the incidence of depression in postpartum women

The forest plot in Figure 3 shows that there was an effect of verbal violence on the incidence of postpartum depression. Those who received verbal violence were 2.89 times

more depressed than those who did not receive verbal violence (aOR = 2.89; 95% CI = 1.96 to 4.25; p= 0.001). The forest flot also showed high heterogeneity of effect estimates between primary studies (I²= 67%; p= 0.006). Thus, the calculation of effect estimation is carried out using the random effect model approach.

The funnel flot in Figure 3 shows that the above shows that the distribution of effect estimates between studies is more or less symmetrical, that is, the distribution or distribution of effect estimates to the right

and left of the vertical line of the average effect estimates is relatively the same. Thus, the funnel flot indicates there is no publication bias.

The effect of physical violence on the incidence of depression in postpartum women

Table 4 presents descriptions of 7 primary articles with cross-sectional studies regarding the effect of physical violence on the incidence of depression in postpartum women conducted on a total of 2,896 samples.

Table 4. Table PICO summary of cohort articles from primary study sources with sample size (n = 2.896)

Author (Year)	Country	Sample	P	I	C	O
Abadiga et al. (2017)	Ethiopia	295	Postpartum women	Experiencing physical violence	No physical violence	Depression
Bhusal et al. (2018)	Nepal	346	Postpartum women	Receiving physical violence	No physical violence	Depression
Govender. (2020)	South Africa	326	Postpartum women	There was physical violence during childbirth	No physical violence	Depression
Islam et al. 2017)	Bangladesh	426	Postpartum women	Experiencing physical violence	No physical violence	Depression
Mahange et al. (2018)	Africa	500	Postpartum women	Experiencing physical violence in pregnancy	No physical violence	Depression
Seuza et al. (2021)	Brazil	432	Postpartum women	There was physical & verbal violence	No physical & verbal violence	Depression
Wangel et al. (2016)	Swedia	1003	Postpartum women	Receiving physical violence during pregnancy	No physical violence	Depression

Table 5. Data of Adjusted Odd Ratio (aOR) and 95% confidence interval (95%CI) Effects of Physical Violence on Depression in Postpartum Women

Author	Year	aOR	95% CI	
			Upper Limit	Lower Limit
Wangel et al. (2017)	2017	2.00	1.21	3.29
Abadiga (2018)	2018	5.92	2.44	14.40
Bhusal and Nisha (2020)	2020	0.84	0.673	3.342
Islam et al. (2017)	2017	1.79	1.25	3.43

Author	Year	aOR	95% CI	
			Upper Limit	Lower Limit
Mahenge et al. (2018)	2018	5.80	2.98	11.43
Souza et al. (2021)	2021	1.51	1.13	2.02
Govender et al. (2016)	2016	6.47	1.36	30.53

Study or Subgroup	log[Odds Ratio]	SE	Weight	Odds Ratio IV, Random, 95% CI
Abadiga 2019	1.7783	0.4522	11.8%	5.92 [2.44, 14.36]
Bhusal and Bhandari 2018	-0.1744	0.1131	17.7%	0.84 [0.67, 1.05]
Govender et al 2020	1.8672	0.7958	6.8%	6.47 [1.36, 30.78]
Islam et al 2017	0.5822	0.1832	16.8%	1.79 [1.25, 2.56]
Mahenge et al 2018	1.7579	0.3398	14.0%	5.80 [2.98, 11.29]
Souza et al 2016	0.4121	0.1479	17.3%	1.51 [1.13, 2.02]
Wangel et al 2016	0.6931	0.2564	15.6%	2.00 [1.21, 3.31]
Total (95% CI)			100.0%	2.29 [1.37, 3.83]

Heterogeneity: Tau² = 0.37; Chi² = 55.74, df = 6 (P < 0.00001); I² = 89%
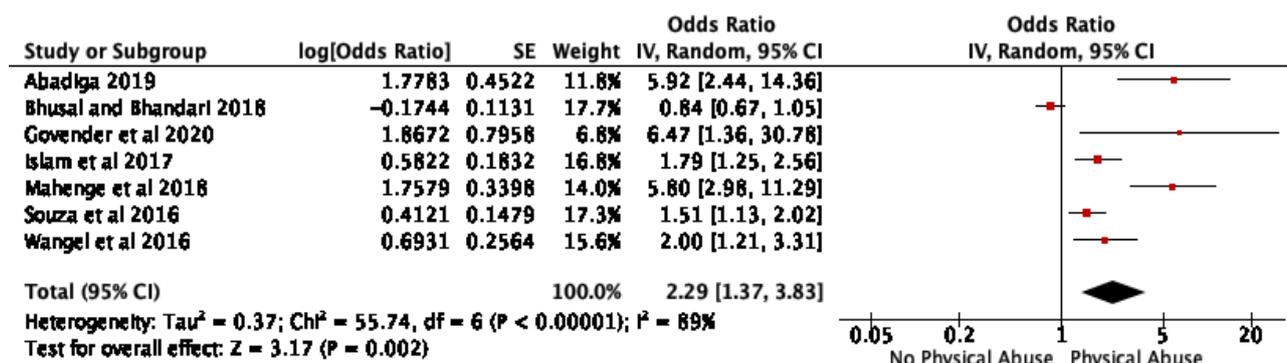Test for overall effect: Z = 3.17 (P = 0.002)

Figure 5. Forest plot of the effect of physical violence on the incidence of depression in postpartum women
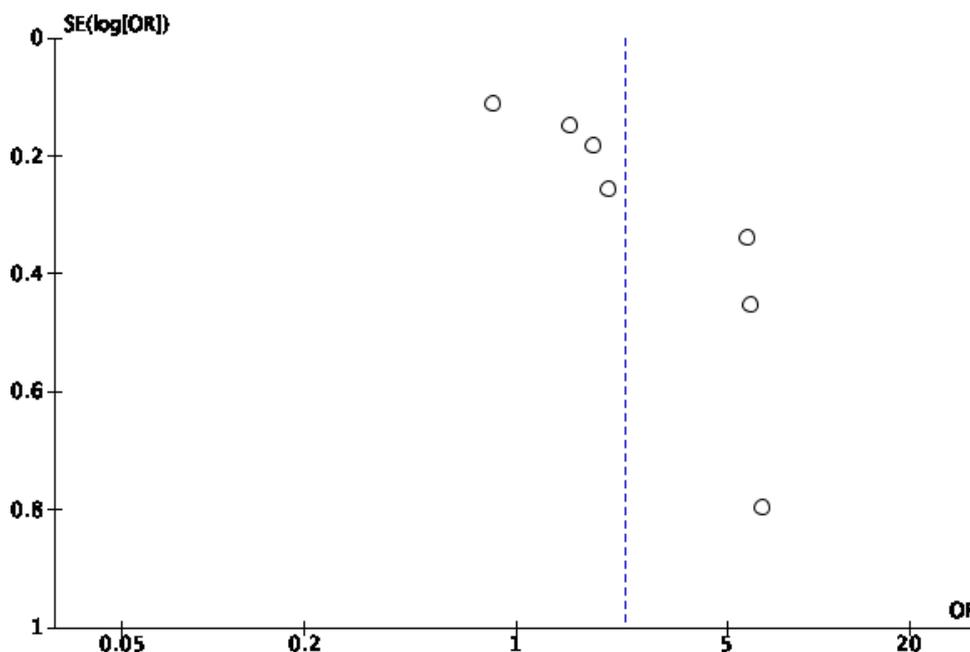

Figure 6. Funnel plot the effect of physical violence on the incidence of depression in postpartum women

The forest plot in Figure 4 shows that there is an effect of physical violence on the incidence of depression in postpartum women, and this effect is statistically significant. Postpartum women who received physical violence were more likely to experience depression 2.29 times than those who did not experience physical violence (aOR= 2.29; 95% CI = 1.37 to 3.83; p= 0.002). The forest flot also showed high heterogeneity of effect estimates between primary studies (I²= 89%; p <0.001). Thus, the calculation of effect estimation is carried out using the random effect model approach.

The funnel plot in Figure 5 shows that the distribution of effect estimates between

studies is more or less symmetrical, that is, the distribution or distribution of effect estimates to the right and left of the average vertical line of effect estimates is relatively the same. Thus, the funnel flot indicates there is no publication bias.

<div align="center">

DISCUSSION

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1. Effect of verbal violence on depression in postpartum women

The primary research included in this meta-analysis totaled 7 articles originating from Malaysia, South Africa, Brazil, Japan and Spain. The sample size is 3.056. This meta-analysis concluded that there was an effect of verbal violence on the incidence of depression (aOR= 2.89; 95% CI= 1.96 to 4.25; p=0.001). This meta-analysis demonstrated high heterogeneity of effect estimates between primary studies (I^2 = 67%; p = 0.006). Thus, the calculation of the estimated effect is carried out using the random effect model approach. The funnel plot shows that there is a publication bias.

This meta-analysis uses research that has controlled for confounding factors because it uses an Adjusted Odds Ratio (aOR) effect size in selected primary studies. In line with the results of this meta-analysis, there were 6 primary studies in this study which showed a significant value related to the effect of verbal violence on the incidence of depression as indicated by not touching the horizontal line of each study with the vertical line on the forest plot. These studies include research by Ahmad et al., 2018; Govender et al., 2020; Miura and Fujiwara, 2017; Vazqueez et al., 2021; Vazqueez et al., 2021; and Vazqueez et al., 2022.

Several studies have shown that there is an effect of verbal violence on the incidence of depression, such as research by Ahmad et al, (2018) which shows that the presence of consistent verbal violence has a probability of 2.34 times compared to those who

do not experience verbal violence (aOR= 2.34; 95% CI= 1.12 to 4.89). Research by Vazquez et al. (2022) shows that the presence of consistent verbal violence has a 2.02 times probability compared to those who do not experience verbal violence (aOR=2.02; 95%CI= 1.35 to 3.02. compared to health workers who do not receive supervision support (aOR=3.06; 95% CI= 1.56 to 6.01) Research by Miura and Fujiwara (2017) showed similar results, this study showed that verbal violence was a significant factor in the incidence of depression (aOR=4.04; 95% CI=1.81 up to 9.02).

2. Effect of physical violence on depression in postpartum women

The primary research included in this meta-analysis totaled 7 articles originating from Ethiopia, Nepal, Africa, South Africa, Bangladesh, Brazil and Sweden. The sample size is 3.034. This meta-analysis concluded that there was an effect of verbal violence on the incidence of depression (aOR= 2.29; 95% CI = 1.37 to 3.83; p= 0.002).

This meta-analysis demonstrated high heterogeneity in effect estimates between primary studies (I2 = 89%; p<0.001). Thus, the calculation of the estimated effect is carried out using the random effect model approach. The funnel plot shows no publication bias. This meta-analysis uses research that has controlled for confounding factors because it uses an Adjusted Odds Ratio (aOR) effect size in selected primary studies. In line with the results of this meta-analysis, there were 5 primary studies in this study which showed a significant value related to the effect of physical violence on the incidence of depression as indicated by not touching the horizontal line of each study with the vertical line in the forest plot. These studies include research by Abadiga., 2017; Governor., 2020; Islam et al., 2017; Mahange., 2018; Souza., 2016; Wangle., 2016.

Several studies have shown that there

is an effect of verbal violence on the incidence of depression, such as research by Abadiga, (2022) which shows that postpartum women who receive physical violence have a 5.92 times greater likelihood than those who do not experience verbal violence (aOR = 5.92; 95% CI= 2.44 to 14.36; p<0.001). Research by Govender et al. (2020) also showed similar results, this study showed that physical violence was a significant factor in the use of SIKR (aOR=6.47; 95% CI 1.36 to 30.78). Research by Mahange et al, (2018) entitled "Adverse childhood experiences and intimate partner violence during pregnancy and their association to postpartum depression" also showed similar results. The study showed that physical violence was a significant factor in the incidence of depression (aOR=5.80; 95% CI =2.98 to 11.29).

AUTHOR CONTRIBUTION

Ebtaria Hartiwi Putri as the main researcher is in charge of selecting research topics, searching and evaluating articles, as well as data analysis. Argyo Dermatiti and Bhisma Murti acted as supervisors.

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CONFLICT OF INTERESTS

There is no conflict of interest.

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