



One in Four Mothers Suffer from Postpartum Depression in Adama Town, Central Oromia Region of Ethiopia: a Cross Sectional Study

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Keywords

Postpartum depression; mothers; risk factors; Ethiopia

Abstract

Aim: Postpartum depression (PPD) is a major public health problem that affects mothers after childbirth and can last up to a year. However, research on the size and factors related with postpartum depression in mothers following childbirth in Ethiopia, particularly in the study area, is limited. Thus, the goal of this study was to determine the prevalence and risk factors for postpartum depression in Adama Town, Ethiopia. **Subjects and Methods:** A facility-based cross-sectional study was undertaken on 416 mothers receiving postpartum care from October 1st to December 31st, 2020. The study participants were chosen via systematic random sampling. Face-to-face interviews with semi-structured questionnaires were utilized to collect data, and the Edinburgh Postnatal Depression Scale (EPDS) was employed to measure postpartum depression. STATA Version 17 was used to analyse the data. **Results:** The prevalence of postpartum depression was 25 % (95 % confidence interval: (21.1 % - 29.2 %)). Previous history of depression (AOR = 3.07, 95 % CI: 3.84 - 5.15), an unhappy marital relationship (AOR = 2.0, 95 % CI: 1.09 - 3.68), a lack of partner

support (AOR = 2.41, 95 % CI: 1.29 - 4.48), and intimate partner violence during pregnancy (AOR = 1.89, 95 % CI: 1.06 - 3.37) were associated with postpartum depression. **Conclusion:** Postpartum depression symptoms affect one out of every four women who received postnatal care during the study period. Early detection and treatment of postpartum depression in women during antenatal visits should be prioritized, and interventions that target the aforementioned causes would help to alleviate the problem.

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Introduction

Postpartum depression (PPD) is a mood disorder that affects postpartum mothers [1]. It is described as a moderate to severe depressive episode that occurs four weeks after delivery [2]. During pregnancy, childbirth, and immediately following delivery, women undergo a number of physical, hormonal, and emotional changes [3]. Every postnatal woman experienced mood swings, worry, perplexity, and an inability to reconcile her experienced mood swings, worry, perplexity, and an inability to reconcile her personal sentiments to idealized social

expectations [4]. However, postpartum depression is characterized by symptoms such as hopelessness, sadness, nausea, changes in sleep and eating habits, decreased libido, crying spells, anxiety, irritability, feelings of isolation, mental liability, and thoughts of harming oneself and/or the infant, and even suicidal ideation [5]. Globally, it is estimated that 17 (22 %) of women suffer with PPD, with developing nations having the highest frequency [1], and over half of mothers may have recurrences in subsequent pregnancies [6]. In impoverished countries, the prevalence of PPD ranges from 1.9 % to 82.1 %, while in industrialized countries, it ranges from 5.2 % to 74.0 %. Prevalence is much lower, ranging from 0.1 % in Finland to 26.3 % in India [5]. PDD is predicted to affect 16.84 % of Africans, with high prevalence recorded in Burkina Faso (44 %), Uganda (43 %), and Ethiopia (22.08 %), and low incidence observed in Morocco (6.9 %) [7,8,9].

The factors that contribute to PPD can be broadly characterized as biological, psychological, and obstetric [10]. Biological factors associated with PPD include the mother's age, hormonal disturbance during pregnancy, and a history of the premedical condition [11]. Psychosocial factors such as prenatal depression, previous psychiatric illness, poor marital relationship, mothers with a history of unplanned pregnancy and loss of a baby, low socioeconomic status, lack of social support, experiencing intimate partner violence, and stressful life events [12-18]. The most common obstetric variables related with PPD were primiparous mothers, emergency caesarean delivery during pregnancy, perinatal complications, and lack or failure to commence breastfeeding [19-21].

PPD is an important public health issue as well as a clinical emphasis because it affects both the mother and her child [22]. Increases maternal morbidity and mortality, as well as the risk of suicide and poor quality of life, a delay in starting to breastfeed and maintaining lactation, decreases in social interaction particularly in the first year after delivery, and children of depressed mothers are at risk of problems such as poor cognitive functioning, which has a negative impact on the four domains of a child's development (behaviour, psychomotor, cognitive, and social-emotional) and behavioural inhibition, emotional maladjustment, violent behaviour, and psychiatric and medical disorders in adolescence [22-26].

Despite having disastrous implications, PPD is little understood, particularly in low-income countries [27]. Few investigations on the prevalence and risk factors for PPD have been undertaken in Ethiopia. Across the country, there are significant socio-cultural disparities and limited availability to social assistance for postpartum women. In order to prevent and discover problems early, program designers and implementers must have

access to evidence-based information. As a result, the purpose of this study was to determine the size of and identify the factors related with PPD among postnatal women attending selected governmental health facilities in Adama, Ethiopia, Central Oromia area.

Subjects and Methods

A facility-based cross-sectional study was undertaken in Adama, a town which is situated 99 kilometres east of Addis Ababa, from October 1st to December 31st, 2020. The town is encompassed by the Oromia Regional State's East Showa Zone, and it comprises 14 urban and four rural Kebeles (the smallest administrative unit in Ethiopia). Adama has one government hospital, seven government health facilities, four private hospitals, 94 private clinics of various levels, 17 special private clinics, four non-governmental clinics, and 108 pharmacy stores and pharmacies. Using a simple random selection procedure, the study was done in four selected health facilities: Adama health centre, Geda health centre, Biftu health centre, and Adama hospital medical college. All postpartum mothers aged 15 to 49 years old who attended postnatal care service clinics at the designated health facilities in Adama town within six weeks of delivery were included in the study. Postpartum women who were critically unwell or had a mental condition were not eligible. The sample size was estimated using the single population proportion formula with a 95 % confidence interval, a 5 % margin of error, and a 50 % prevalence of postpartum depression symptoms. With a 10 % non-response rate, the total sample is 422. The overall sample size was allocated proportionally to the specified health facilities. The mothers were picked using a systematic sampling process. The sampling interval was obtained by dividing the whole study population who had a follow-up three months before the data collecting period, which was 816, by the sample size (422), the k value of 2, and then starting point was selected randomly.

Measurement

A validated and pre-tested interviewer-administered questionnaire was used to collect data. The Edinburgh Postnatal Depression Scale (EPDS) consists of ten inventory questions that explore feelings during the past seven days. Each question includes four alternative solutions with points ranging from 0 to 3, with 13 being the cut-off. It has been validated as a screening tool for postnatal depression symptoms in Ethiopia, with a sensitivity of 78.9 % and a specificity of 75.3 % [28]. The Kansas Marital Satisfaction Scale, with three items and a total score of 21, was employed. Mothers with a Kansas Marital Satisfaction scale score of ≥ 17 were considered satisfied, while those with a score of < 17 indicated dissatisfied with their marital position [29]. Intimate partner violence (IPV) was assessed using questionnaires that included elements of physical, sexual, or psychological assault [30].

Data processing and analysis

The data was entered twice using Epi Data 3.1 software and then transferred to STATA version 17 for analysis. To determine the prevalence, descriptive statistics were performed using frequencies, and the fraction at 95 % confidence interval was employed. The components from the Edinburgh Postnatal Depression Scale (EPDS) were combined to generate a single variable. The depression score was divided into two levels (depressed and not depressed). PPD was detected if the score was 13 or higher. To examine the relationship between PPD and explanatory variables, a logistic regression model was used. Multicollinearity was checked using Variance Inflated Factors (VIF) and the cutoff point less than 5 was used. The adjusted odds ratio with a 95 % CI was used to report the result, and a P value of less than 0.05 was considered as a statistically significant association.

Ethical approval

This study was undertaken in the aftermath of the Helsinki Declaration. Before beginning data collection, the Adama Hospital Medical College Institutional Review Board (Ref.no. AHMC/IRB/GPH/24/11/2020) granted ethical approval. Each study participant voluntarily provided written consent.

Results

The study included 416 mothers (with a 98 percent response rate). 238 (57.2 %) of the total participants were between the ages of 15 and 24, and 227 (54.8 %) were Orthodox Christians. The majority, 409 (98.3 %), were married, and 308 (74.0 %) were unemployed; 178 (42.8 %) had secondary or higher education, and 412 (99 %) lived in an urban area (Table 1).

Nearly two-thirds of the mothers (265 (63.7 %) were multiparty and 323 (77.6 %) of the pregnancies were planned, 99 (23.8 %) had a history of depression, 74 (17.8 %) were dissatisfied with their marriage, and 82 (19.7 %) of them experienced intimate partner violence during pregnancy, 245 (59.0 %); mothers who had laboring work during the postnatal period, and 64 (15.4 %) had no support from their partners (Table 2).

One in four (25 % with 95 % CI: (21.1 % - 29.2 %) mothers had signs of postpartum depression. This study indicated that mothers with a history of depression were 3.07 times more likely to experience postpartum depressive symptoms than moms without a history (AOR =

Table 1. Socio-demographic Characteristics of the mothers

Sociodemographic characteristics	Frequency %
Age	
15 - 24	151 (36.3)
25 - 35	238 (57.2)
36 - 49	27 (6.5)
Religion	
Orthodox	227 (54.8)
Muslim	134 (32.4)
Protestant	53 (12.8)
Marital status	
Married	409 (98.3)
Others ^a	7 (1.7)
Occupational status of the mothers	
Unemployed	308 (74.0)
Employed	108 (26.0)
Educational status of the mothers	
Unable to read and write	57 (13.7)
Primary	181 (43.5)
Secondary and higher	178 (42.8)
Place of residency	
Urban	412 (99.0)
Rural	4 (1.0)

^aIn marital status categories (single and divorced)

3.07, 95 % CI: 3.84 - 5.15). Mothers with dissatisfied marital relationships were 2.0 times more likely to experience postpartum depression symptoms compared to mothers who are satisfied with their marital relationship (AOR = 2.0, 95 % CI: 1.09 - 3.68). The odds of postpartum depression symptoms increased by 2.42 times for mothers who did not have assistance from their husbands than who had support (AOR = 2.41, 95 % CI: 1.29 - 4.48). Mothers who suffered intimate partner violence during pregnancy were 1.89 times more likely to experience postpartum depressive symptoms compared to mothers who have no experienced violence (AOR = 1.89, 95 % CI: 1.06 - 3.37) (Table 3).

Table 2. Obstetrics and others characteristics of the mothers

Obstetrics and others characteristics	Frequency %
Parity	
Nulliparity	151 (36.3)
Multiparity	265 (63.7)
Planned pregnancy	
Yes	323 (77.6)
No	93 (22.4)
History of abortion	
Yes	729 (17.3)
No	344 (82.7)
Mode of delivery of last pregnancy	
Vaginally	320 (76.9)
C/Section	74 (17.8)
Instrumental delivery	22 (5.3)
History of complication during last pregnancy	
Yes	60 (14.4)
No	356 (85.6)
History of Previous depression	
Yes	99 (23.8)
No	317 (76.2)
Satisfaction with marriage	
Yes	342 (82.2)
No	74 (17.8)
History of substance use during last pregnancy	
Yes	386 (92.8)
No	30 (7.2)
Intimate partner violence during last pregnancy	
Yes	82 (19.7)
No	334 (80.3)
Mothers working at postpartum period	
Yes	245 (59.0)
No	170 (41.0)
Partner support	
Yes	352 (84.6)
No	64 (15.4)

Discussion

According to this study, 25 % of mothers experienced PPD, and showed a history of previous depression, an unsatisfactory marital relationship, a lack of support, and intimate partner abuse during pregnancy being important risk factors.

The level of PPD in this study is consistent with earlier Ethiopian studies [31]. It was also greater than the figures reported from Sudan (9.2 %), Ghana (7 %), and Ethiopia (12.5 %) [32-34]. The discrepancy could be attributed to changes in screening tools utilized, for example in the studies from Ghana and South Ethiopia, which used the Patient Health Questionnaire [33,34]. During the early stages of pregnancy, the EPDS detects depressive symptoms in conjunction with anxiety, whereas the PHQ-9 assesses somatic symptoms [35]. The difference in sample size is also a source of disagreement; for example, the sample size in the Sudanese study is small in comparison to our study [32]. However, our findings are lower than those of other studies conducted in Iran (38.8 %) and Bangladesh (39.4 %) [36,37]. The study's postpartum time is also a source of diversity. This study used 6 weeks after delivery as opposed to 12 months in Bangladesh [37]. A cut-off value larger than 12 was utilized in an Iranian investigation to assess the existence of depression [36].

This study discovered that moms with a history of depression were more likely to develop PPD. This result is consistent with research from Canada, China, and Ethiopia [38-40]. Mothers with a history of depression may be more prone to hormonal alterations, which is a clinical sign of an increased risk of PPD [41]. Relationship satisfaction is important for postpartum parents because it influences how effectively mothers and fathers interact as co-parents of small children and promotes healthy relationship dynamics in general, and a fulfilling marriage relationship is critical for mental health [42]. It was discovered that women who were dissatisfied with their marital relationship were more likely to have PPD than their counterparts. This finding is consistent with research from Iran, Nigeria, and Turkey [43-45].

This study discovered a statistically significant link between a lack of postpartum partner support and PPD. This conclusion is consistent with previous research from Eritrea and Japan [46, 47]. It's natural that a woman's postpartum stress, worry, and helplessness can be increased by her husband's lack of support, thereby raising her likelihood of getting PPD [39]. Assistance from a partner is more important than assistance from family and other relatives. According to the study, moms who receive support from others but not from their husband

Table 3. Bivariate and multivariate logistic regression analysis of factors associated with postnatal depression among mothers in Adama Town, Ethiopia, 2020 (n = 416)

Variables	Postpartum depression		COR (95 % CI)	AOR (95 % CI)
	Yes n (%)	No n (%)		
History of Previous depression				
Yes	43 (41.4)	61 (58.6)	3.2 (1.98 - 5.24)	3.07 (1.84 - 5.15)*
No	56 (17.9)	256 (82.1)	1	1
Marital satisfaction				
Yes	71 (20.8)	271 (79.2)	1	1
No	41 (55.4)	33 (44.6)	3.07 (1.81 - 5.21)	2.0 (1.09 - 3.68)**
Partner support				
Yes	73 (20.7)	279 (79.3)	1	1
No	31 (48.4)	33 (51.6)	3.59 (2.06-6.25)	2.41 (1.29 - 4.48)*
Intimate partner violence				
Yes	33 (40.2)	49 (59.8)	2.49 (1.49 - 4.17)	1.89 (1.06 - 3.37)*
No	71 (21.3)	263 (78.7)	1	1
History of abortion				
Yes	24 (33.3)	48 (66.7)	1.65 (0.95 - 2.86)	1.23 (0.66 - 2.29)
No	80 (23.3)	264 (76.7)	1	1
Substance use during last pregnancy				
Yes	17 (39.5)	26 (60.5)	2.15 (1.11 - 4.14)	1.42 (0.66 - 3.03)
No	87 (23.3)	286 (76.7)	1	1
Working during postpartum period				
Yes	67 (27.3)	178 (72.7)	1.40 (0.88 - 2.23)	1.40 (0.84 - 2.34)
No	36 (21.2)	134 (78.8)	1	1

Significant at *p < 0.05; **p < 0.01

may be at a significantly higher risk of developing PPD [47]. Other characteristics related with PPD include intimate partner violence. This conclusion is consistent with research from Bangladesh, Canada, and Ethiopia [37, 48-49]. IPV against women can have a negative influence on their mental health both during and after pregnancy. [50]. Mothers often demand greater emotional support from their spouses during pregnancy than ever before [51]. Pregnant moms who have experienced emotional abuse have low self-esteem and motivational impairment, which may be a factor in the development of PPD [52].

This study uses validated methodologies for outcome and explanatory factors, which lends credibility to the findings and enables for comparison across studies. However, because the study was facility-based, it is impossible to generalize about the moms in the general community in which the study was done. Like any other cross-sectional study, it is difficult to establish tempo-

ral relationships between explanatory variables and outcome. In conclusion, PPD affected one in every four mothers. Previous depression, an unhappy marriage connection, a lack of partner support, and intimate partner violence were all individually linked to postpartum depression. The high frequency of PPD emphasizes the importance of routinely screening expectant mothers during prenatal care visits.

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Conflict of Interest

None to declare.

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