



St. PAUL'S HOSPITAL MELLINIUM MEDICAL COLLEGE
SCHOOL OF PUBLIC HEALTH

Postpartum Depression: Prevalence, And Associated Factors Among Postpartum Mothers Attending Primary Health Care Units In Addis Ababa, Ethiopia

Name Of Candidate: Michael Bimrew

A MANUSCRIPT SUBMITTED TO THE DEPARTMENT OF PUBLIC HEALTH, IN PARTIAL
Fulfillment Of The Requirements For The Degree Of Master's Of General Public Health

DECEMBER, 2023

ADDIS ABABA, ETHIOPIA



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Abbreviations and Acronyms

ANC: -Antenatal care

DHS:-Demographic and Health Survey

DSM:-Diagnostic Scale of Measurement

EDHS: -Ethiopian Demographic Health Survey

EPDS: -Edinburgh Postpartum Depression Scale

PNC: - Postpartum care

PPD: - Postpartum Depression

SPSS: -Statistical Package of Social Science

OSSS:-Oslo Social Support Scale

Abstract

Introduction: Postpartum depression (PPD) significantly impacts women's mental health following childbirth, often due to undetected and untreated diagnostic challenges. In Ethiopia, scant knowledge exists about the Prevalence, associated factors and barriers faced by primary healthcare professionals in diagnosing PPD, along with its prevalence rates in primary healthcare settings.

Objective: To assess postpartum depression Prevalence, associated factors and Exploring barriers to diagnose Postpartum depression among Primary health care units professionals in Addis Ababa, Ethiopia.

Methods: A mixed-method study comprising a facility-based cross-sectional study and an exploratory descriptive study was conducted in primary health care units of Addis Ababa, Ethiopia from November 2022 to June 2023. Bivariate and multivariable logistic regression analysis and Thematic analysis was carried out.

Result: In this study the prevalence of postpartum depression among women in the postpartum period was 19.8% (95%CI: 16, 23.3). And factors associated includes marital status (AOR: 0.12; 95% CI: 0.035, 0.428), low income level (AOR: 2.209; 95% CI: 1.181, 4.5132), unplanned pregnancy (AOR: 3.004; 95% CI: 1.371, 6.583), postpartum hemorrhage (AOR: 5.068; 95% CI: 1.014, 25.33), stressful life events, history of depression (AOR: 3.2; 95% CI: 1.572, 6.606), poor social support.

Conclusion: The study reveals a high prevalence of postpartum depression, linked to significant factors such as being single, low income, unplanned pregnancy, financial struggles, history of depression, poor social support, and experiencing postpartum hemorrhage.

Key Words: Postpartum Depression, Prevalence, Associated Factors, Barriers of Diagnosis, Primary Healthcare Units

1. Introduction

The postpartum period, encompassing the first six weeks after childbirth, is a critical and vulnerable time for both mothers and newborns (1). It is marked by physical and mental health challenges that necessitate focused care and support. Postpartum care, including the identification and management of physical and mental disorders, plays a vital role in safeguarding the well-being of both mothers and infants during this period (2). Neglecting proper postpartum care not only jeopardizes the health and survival of mothers and infants but also misses crucial opportunities to promote healthy behaviors, resulting in long-term consequences(3,4).

Postpartum mood disorders, particularly postpartum depression (PPD), represent one of the most common forms of postnatal maternal morbidity, affecting a significant number of women across different cultures. The consequences of PPD are far-reaching, impacting maternal-infant attachment, breastfeeding initiation, and the developmental trajectory of the infant's social, cognitive, and behavioral skills(5).

Estimates of the prevalence of depression in the postpartum period vary from 16% to 18.51% globally, reflecting the wide-ranging impact of this condition (6,7). Prevalence rates also differ significantly across nations. Studies have shown that in affluent nations, prevalence estimates by self-reported questionnaire range widely, with prevalence figures as low as 1.9% and as high as 82.1% (8). Furthermore, women in low- and middle-income countries exhibit a pooled prevalence of 18.7% (9). The prevalence of PPD has been assessed in various African countries, demonstrating a wide spectrum, such as prevalence rates ranging between 6.9% to 43% (10).

However, the prevalence of PPD and its associated factors have remained underexplored in primary health care units of Ethiopia. The first six weeks of life, while being a critical period for both mothers and newborns, have often been neglected in terms of adequate maternal and newborn health services. As a result, the provision of appropriate postpartum care, especially in the realm of maternal mental health, remains essential to ensuring the overall well-being of mothers and children(11,12).

Primary healthcare units serve as the primary point of contact for a significant number of mothers during the postpartum period, making them pivotal in recognizing, diagnosing, and treating maternal health problems, including PPD. However, existing data indicates a significant gap in the timely provision of postpartum care, resultantly affecting the identification and management of PPD(13).

Moreover, there remains a notable absence of research into the specific barriers faced by primary healthcare professionals when addressing PPD in Ethiopia and across Africa. Existing studies primarily

conducted in hospital settings might not adequately capture the experiences and challenges of women seeking postpartum care within primary healthcare contexts, limiting the representativeness of their findings(14).

Understanding the prevalence and factors associated with PPD within primary healthcare settings is essential for developing targeted interventions. Recognizing and investigating the barriers faced by primary healthcare professionals in diagnosing PPD is an area that demands exploration, particularly in Ethiopia and broader African contexts.

This study carries profound significance in multiple dimensions of maternal and infant health. By focusing on primary healthcare settings, where the majority of new mothers seek care, it aims to address a critical gap in maternal mental health. The study's findings are expected to shed light on the prevalence and factors associated with PPD in these crucial settings, thus laying the groundwork for more targeted and effective interventions. Moreover, the study aims to uncover the barriers faced by primary healthcare professionals, offering valuable insights for improving the recognition and management of PPD within these contexts.

2. OBJECTIVES

To assess postpartum depression Prevalence, associated factors and Exploring barriers to diagnose Postpartum depression among Primary health care unites professionals in Addis Ababa, Ethiopia

3. Methods and Materials

3.1. Study area and period

The study was carried out in Addis Ababa, the capital city of Ethiopia. There are 98 health centers, two military force hospitals, and 13 public hospitals in the city. The majority of sub-cities have one health center per woreda, which is conveniently accessible to the community and offers maternal healthcare free of charge.

3.2. Study design

A mixed method study involving a facility-based cross-sectional study and exploratory descriptive study was carried out in Primary Health care units of Addis Ababa, Ethiopia from November 2022–June 2023.

3.3. Population

3.4. Source population

Every woman who gave birth in Addis Abeba, Ethiopia

3.5. Study population

All women came to selected primary Health care units for Postpartum care and infant vaccination service during the data collection period of the study.

3.6. Inclusion and exclusion criteria

3.6.1. Inclusion criteria

During the data collection phase of the project, all women who visit particular healthcare facilities (health centers) in Addis Ababa for postpartum care and newborn vaccination services were included.

3.6.2. Exclusion criteria

All women who have a verbal communication problem and complete loss of hearing were excluded

3.7.Sample size determination

Using the single population proportion formula with the assumptions ($z_{\alpha/2}$) = value for the 95% CI, = 1.96 and maximum error tolerance 0.05, the necessary sample size for the study was obtained.

$$n = \frac{(Z_{\alpha/2})^2(p)(1-p)}{w^2} \quad n = \text{initial sample size} \quad \alpha = \text{level of significance}$$

w^2 = prevalence of PPD done at Gondar 25% from the previous study

w = marginal error of 5%

$$n = \frac{(1.96)^2(0.25)(1-0.25)}{(0.05)^2}$$

$$n = 288$$

Due to the fact that the Addis Ababa is divided into 107 woredas clustered into 11 sub-cities, none of which have an equal population or number of health centers (some Woreda had no health centers, effect while others have more than one), and each health center differ with logistics, human resources so that, we used the design 1.5 with rule thumbs

$$= 288 \times 1.5 = 432, \text{ we added } 10\% \text{ non-respondents } (432 \times 10\%) = 43$$

Therefore the final sample size is $432 + 43 = 475$

Table 1: sample size determination for factors affecting Postpartum depression

Key variables	Assumptions	AOR	Total sample size
Occupation: housewife	95% CI & 80% power, 10% non-response rate, and 1.5 design effect	2.57	249
daily laborers	95% CI & 80% power, 10% non-response rate, and 1.5 design effect	3.44	141
woman's age	95% CI & 80% power, 10% non-response rate, and 1.5 design effect	0.18	251
no ANC follow up	95% CI & 80% power, 10% non-response rate, and 1.5 design effect	11.98	132

According to the tables above, a maximum sample size of 251 can be drawn from the four prominent risk factors. The sample size, however, was set at 475 based on a single population

proportion. For this reason, the largest sample was taken from a single population proportion of 475.

3.8.Sampling technique

The study used multi-stage sampling because the city administration health bureau was organized within 11 sub-cities and 106 words with 98 health centers. Therefore 30% of sub-city (3 sub-cities) and three health centers from each sub-city (a total of 9 health centers) were selected in a simple random sampling technique.

The first study subject was chosen by lottery after the sample interval has been calculated ($K = 9125/475 = 19^{\text{th}}$) and the study participants were chosen using systematic random sampling. The entire sample size ($n=475$) was distributed proportionally based on the total number of postpartum care and immunization services provided by each health facility (9 health centers from 3 sub-cities)

The total expected PNC clients for the nine health centers (N_t) is 9152 of which 1626, 826, 1119, 1071, 1500, 652, 832, 1065, and 486 to Addisugebiya, Selam, Hadasie, Woreda 13, worda 14, worda 6, Janmeda, semen and Afenchober health centers respectively represented by (nt). Total

Sample Size (N_e)=475 $ne = \frac{nt}{N_t} * N_e$

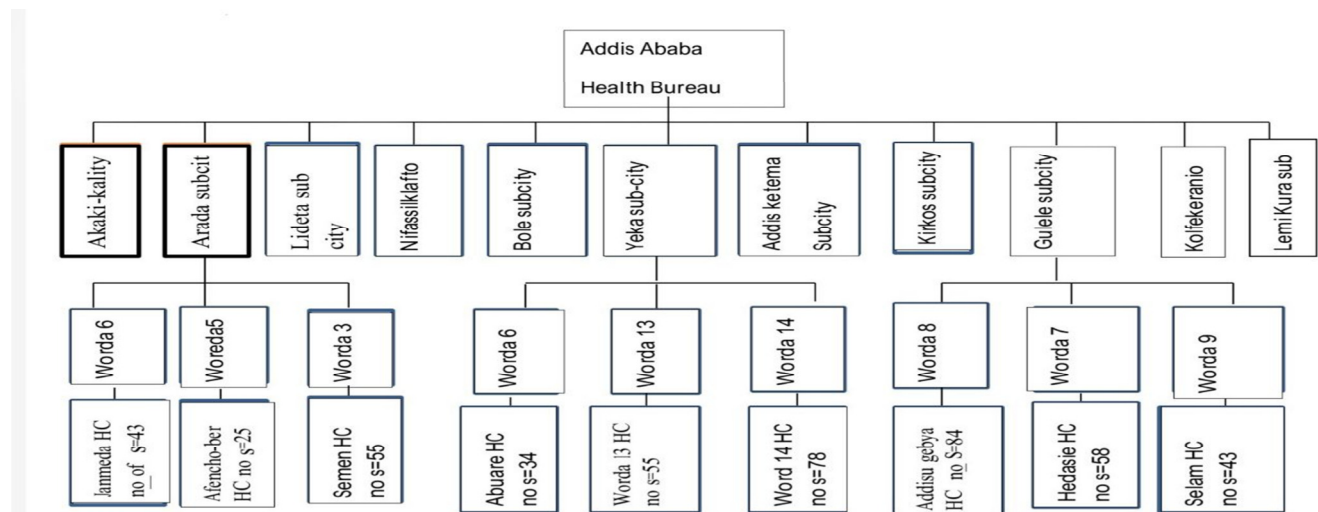


Figure 1. Schematic presentation of sampled health centers under the Addis Ababa health bureau

3.9.Operational definition

Postpartum depression (PDD): Study participants was evaluated using Edinburgh Postpartum Depression Scale (EPDS), a total of 10 questions each answer is given a score of 0 to 3 the maximum score is 30. participants were considered to have postpartum depression if their score was greater than or equal to 13(15,16).

3.10. Data collection method

Face-to-face, semi-structured questionnaires that have been pretested with 5% (24) individuals was used to collect the data. To make the questionnaire easy to comprehend for both the interviewer and interviewee, it was written in the local Amharic language.

3.11. Data collection instrument

To gather data from the study subjects, a pretested structured interviewer-administered questionnaire that was written in English and translated into Amharic was used. Using standardized checklists, socio-demographic, clinical, and obstetric aspects will be evaluated. The Oslo Social Support Scale and the Edinburgh Postpartum Depression Scale will be used to measure the degree of social support and postpartum depression(EPDS), respectively. mothers who come for Postpartum care and infant vaccination service was interviewed with an interviewer-administered questionnaire, facilitated by the open data kit (ODK) tool.

3.12. Data quality assurance

To maintain the quality of the data, a structured questionnaire was created using clear and understandable language, and it was pretested. The training provided to the data collectors and their supervisors covered the study's goals, purposes, and methods. The supervisors closely monitored the enumerators on a daily basis and verified the accuracy of the questionnaires. The questionnaire was pretested to ensure language clarity and appropriateness of responses, although the results were not used in the main investigation.

3.13. Variables

1. Dependent variable

- Postpartum depression

2. Independent variables

- Socio-demographic variables
- Maternity variables
- Health institutional factors

3.14. Analysis procedure

The data was initially cleaned to ensure accuracy, completeness, and to address missing values. Subsequently, the verified and cleaned data was exported to the statistical package for social science (SPSS version 28.0.1). Variables with a p-value of less than 0.25 from the bivariate analysis were selected for multivariate analysis.

Bivariate and multivariable logistic regression analysis was employed to assess crude and adjusted odds ratios, with statistical significance set at a p-value of 0.05 to determine the association's significance level. The multivariable logistic regression analysis model was constructed using a stepwise backward elimination technique, and model fitness was tested using the Hosmer and Lemeshow goodness of fit test. Normality was verified using the Kolmogorov-Smirnov and Shapiro-Wilks tests.

3.15. Ethical consideration

The study obtained ethical approval from the Research Ethical Committee of St. Paul's Hospital Millennium Medical College. Written consent was then obtained from the Addis Ababa Administrative Health Bureau, and a formal letter was provided to the selected sub-cities and subsequent primary healthcare units. Following this, written consent was obtained from each study subject after the interviewer thoroughly explained the purpose, nature, and procedure of the study. The stringent ethical procedures and consent processes ensured that all participants were fully informed and willing to take part.

3.16. Dissemination of results

The finding of this study result will be distributed to the respected concerned bodies such as St Paul millennium medical college, Addis Ababa health bureau, MOH, and other organizations that have their objectives aligned with mental and maternal Health.

4. Result

4.1.Socio demographic characteristics

This study included a total of 475 participants, resulting in a response rate of 100%. The age range of the participants was 18 to 40 years, with a median age of 28 years. A large majority of the study participants 436 (91.8%) were married, while a smaller number 30 (6.3%) were single. Among the study participants, a significant majority of 152 (32%) had completed elementary school. Similarly, 136 (28.6%) partners of the study participants also had an elementary school education. In contrast, 77 (16.2%) study participants held a degree or higher education. Additionally, 130 (27.4%) of their partners had a degree or higher education

Furthermore, a substantial portion of the participants, 232 (48.8%), were housewives, while 136 (28.6%) were self-employed. The income level of the participants ranged between 2,000 ETB to 60,000 ETB, with a median income of 8,500 ETB. It is noteworthy that the majority of the participants, 270 (56.8%) fell below the World Bank's poverty line.

Table 2: Socio demographic characteristics of the participants

Variables	Category	Frequency (n)	Percentage (%)
Age (in year)	Below median age	278	56.8
	More than median age	205	43.2
Level of education	1. Unable to read or write	32	6.7
	2. Able to read and write	23	4.8
	3. Elementary school (1-8)	152	32
	4. High school	105	22.1
	5. Diploma	86	18.1
	6. Degree or higher	77	16.2
Marital status	Single	30	6.3

	Married	436	91.8
	Divorced	5	1.1
	Widowed	4	0.8
Occupational status	Government employee	73	15.4
	Housewife	232	48.8
	Self-employee	136	28.6
	Students	14	2.9
	Daily worker	20	4.2
Estimated monthly income	Below World Bank's poverty line	270	56.8
	Above World Bank's poverty line	205	43.2

4.2.Obstetric characteristics of the study Participants

Most of the study participants, 471 (99.2%) attended antenatal visits during their pregnancies. However, it is concerning to note that only a small proportion of women 60 (12.6%) reported receiving counseling or advice about postpartum depression. Furthermore, 66 (13.9%) mothers experienced medical illnesses during their antenatal period, with 9 (13.6%) of them requiring admission to a healthcare institution. Additionally, 63 (13.3%) stated that their last pregnancy was unplanned.

Regarding the place of delivery, a significant majority of the mothers 253 (53.3%) gave birth in public health centers, while 184 participants (38.7%) delivered their babies in public hospitals. Interestingly, 1 mother gave birth at home.

Regarding delivery methods, a large number of women, specifically 367 (77.3%), had spontaneous vaginal deliveries. On the other hand, 97 (20.4%) women underwent cesarean

sections, which require surgical intervention during childbirth. Additionally, a small number of women, specifically 11 (2.3%) reported receiving instrumental assistance during the delivery process.

Out of the total respondents in the study, 92 (19.4%) mothers experienced complications during the delivery process. Among these complications, 21 (22.8%) cases were attributed to neonatal asphyxia, 19 (20.7%) cases to hypertension (a condition characterized by high blood pressure during pregnancy), 15 (16.3%) cases to complications arising from a prolonged second stage of labor, and 13 (14.1%) cases to mal-presentation (when the baby's positioning during birth is not ideal).

Out of the 475 study participants, only 254 (53.5%) mothers had a postpartum revisit to the health facilities. Among those who had a postpartum revisit, 127 (50%), went to public health centers, while 98 (38.6%) of them visited public hospitals. The remaining 11.4%, or 29 mothers, chose private health facilities for their postpartum care.

Now, it's worth noting that among the respondents who had a postpartum visit, only a small fraction, 27 (10.6%) mothers, were assessed and advised about postpartum depression.

4.3.Mental health characteristics of the study Participants

Among the study participants, a small proportion of individuals, specifically 6 (1.3%), disclosed having a history of mental illness that was diagnosed by a physician before their last pregnancy. Additionally, 70 (14.7%) participants reported experiencing depression prior to becoming pregnant. And 24 (5.1%) of them stated that they have a family member who has received a formal diagnosis of mental illness from a physician.

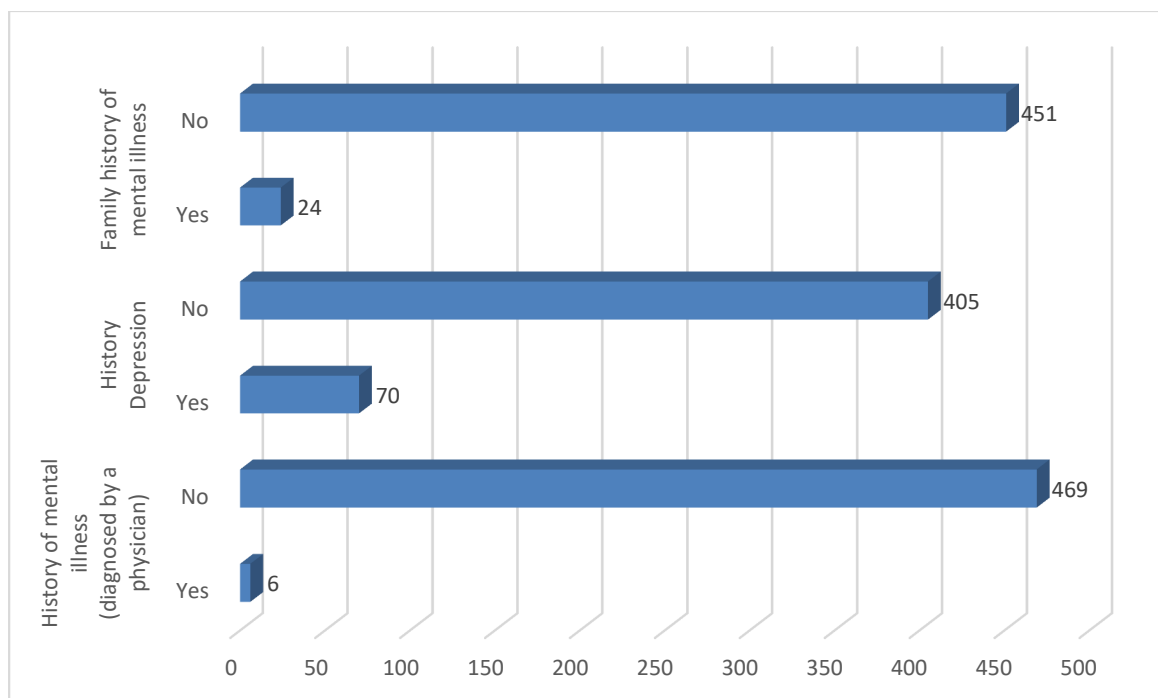


Figure 2: Mental health characteristics of study participants

4.4. Substance use related characteristics of the study Participants

Out of the total 475 study participants, 101 (21.3%) admitted to using substances. Interestingly, 28 (5.9%) specifically started using substances during their last pregnancy.

Among the participants who reported substance use, the vast majority, 85 (84.1%) substance users, exclusively used alcohol. However, a small number of substance users, 2 (1.98%), specifically used chat. The remaining 14 (13.8%) participant reported using a combination of different types of substances or multiple substances.

Table 3 Substance use related characteristics of participants

Variables	Category	Frequency (n)	Percentage (%)
Substance use	Yes	101	21.3
	No	374	78.7
Substance use debut	Before the last pregnancy	73	72.3
	After the last pregnancy	28	27.7
Types of substance used	Alcohol	85	84.1
	Chat	2	1.98
	Alcohol and Chat	5	4.95

Alcohol and cigarette	2	1.98
Alcohol and Shisha	3	2.97
Alcohol, chat and cigarette	2	1.98
Alcohol, chat and shisha	1	0.99
Chat and shisha	1	0.99

4.5.Social and partner support characteristics of the study Participants

Based on the Oslo Social Support Scale, it was found that among the study participants, 158 (33.3%) respondents had poor social support, while 198 (41.7%) participant had moderate support. The remaining 119 (25.1%) individuals reported having strong social support.

Regarding partner support, 77 (16.2%) participants responded that they had very little or little practical and emotional support from their partners. In contrast, 117 (24.6%)participants reported having moderate support, while a majority of participants 281 (59.1%) expressed having strong practical and emotional support from their partners.

In terms of financial support, a large majority of respondents, specifically 448(94.3%), reported receiving financial support from their parents. On the other hand, a small proportion of respondents 27 (5.7%) stated that they never received financial support from their partners.

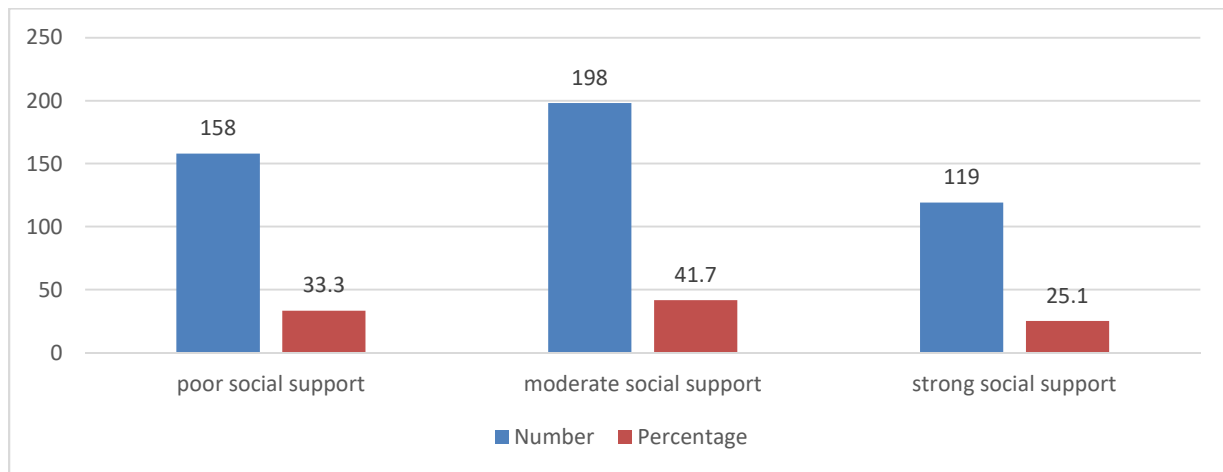


Figure 3: Social support states of study participantsbased on Oslo social support scale

Table 4:Partner support states of study participants

Variables	Category	Frequency (n)	Percentage (%)
practical and emotional partners support	Very low Support	35	7.4
	Low support	42	8.8
	Moderate support	117	24.6
	High support	141	29.7
	Very high support	140	29.5
financial support from partner	Yes	448	94.3
	No	27	5.7

4.6.Prevalence of postpartum depression

In this study, it was found that 94 individuals (19.8%) among the postpartum women developed postpartum depression. This indicates that the prevalence of postpartum depression among women in the postpartum period was 19.8% (95%CI: 16, 23.3).

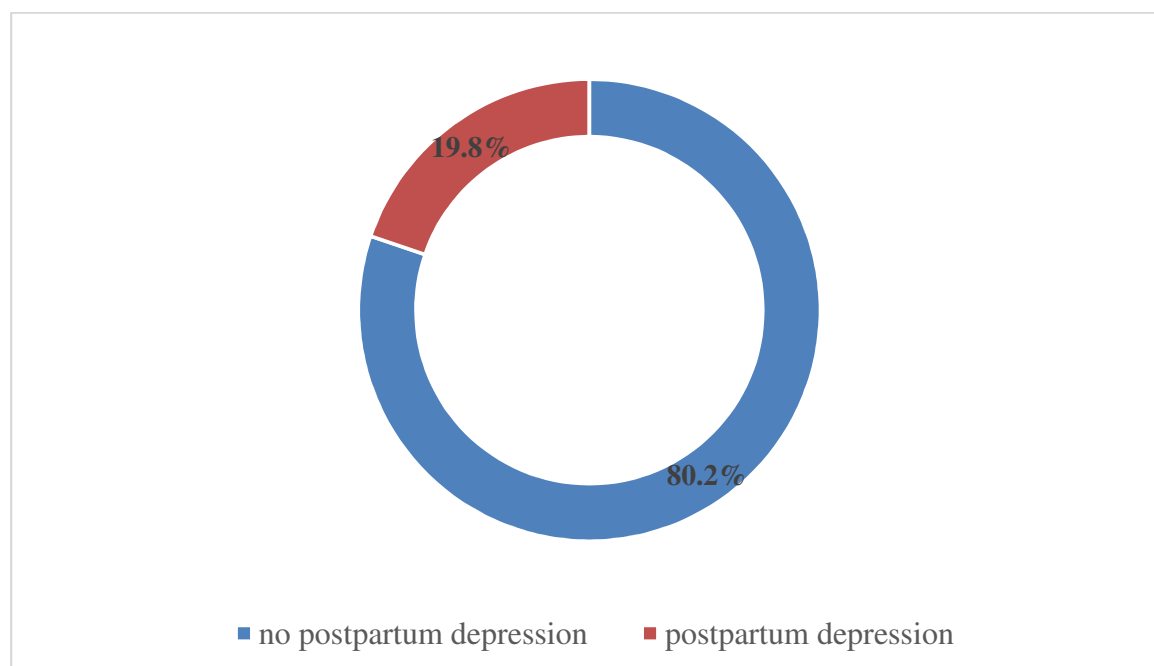


Figure 4: Prevalence of postpartum depression

4.7.Factors associated with postpartum depression of the study Participants

In this study, several factors were considered as potential candidates for the multivariable analysis, including marital status, educational level, occupation, Partner's educational level, income, unplanned pregnancy, medical illness, complications during labor (postpartum

hemorrhage), stressful life events, death of a previous baby, history of depression, social support, level of practical and emotional partner support, financial support from the partner, partner's preference of the baby's sex, and domestic violence.

After performing the multivariable logistic regression model, the following factors were found to be statistically significant: marital status, income less than the World Bank's poverty line, unplanned pregnancy, mode of delivery, complications during labor, stressful life events, history of depression, and social support.

Compared to single women, married women had 87.7% lower postpartum depression (AOR: 0.12; 95% CI: 0.035, 0.428). Additionally, individuals with an income below the World Bank's poverty line (set at \$5.5 per day) have a 2.2 times higher odds of experiencing postpartum depression compared to their counterparts (AOR: 2.209; 95% CI: 1.181, 4.5132). Moreover, individuals who had unplanned pregnancies were 3 times more likely to experience postpartum depression than those who have planned pregnancies (AOR: 3.004; 95% CI: 1.371, 6.583). Furthermore, individuals who face financial struggles during their postpartum period had a 6.4 times higher odds of experiencing postpartum depression compared to those who do not face financial struggles (AOR: 6.433; 95% CI: 2.657, 15.573).

Postpartum mothers with a previous history of depression had a 3.2 times higher risk of experiencing postpartum depression compared to those without a history of depression (AOR: 3.2; 95% CI: 1.572, 6.606). Moreover, individuals who have poor social support had a 5.4 times higher likelihood of experiencing postpartum depression compared to those who have strong social support (AOR: 5.411; 95% CI: 2.090, 14.012).

Furthermore, individuals who experience postpartum hemorrhage have a risk of developing postpartum depression that is approximately 5. times higher than those who do not experience postpartum hemorrhage (AOR: 5.068; 95% CI: 1.014, 25.33)

Table 5 Factors associated with postpartum depression

Variables	Category	PPD		COR(95%CI)	AOR (95%CI)
		Yes	No		
Marital status	Single	7	23	1	1
	Married	368	68	0.056 (0.023, 0.136)*	0.123 (0.035,

					0.428)**
	Divorced	2	3	0.203(0.028, 1.468)	0.193 (0.007, 5.127)
	Widowed	1	3	0.101(0.009,1.136)	0.103 (0.06, 1.720)
Occupation	Government Job	12	61	1	1
	Daily worker	12	8	7.62(2.56, 22.63)*	2.903(0.563, 14.964)
	House wife	41	191	1,091(0.539, 2.208)	0.673(0.235, 1.925)
	Self employed	27	109	1.259(0.596, 2.662)	0.84 (0.29, 2.433)
	student	2	12	0.847(0.168, 4.280)	0.174 (0.006, 4.829)
Partner's educational level	Degree or Higher education	109	21	1	1
	Unable to read and write	5	7	7.26(2.105, 25.087) *	0.228(0.031,3.362)
	Able to read or write	8	19	2.185 (0.846, 5.645)	0.736(0.211, 2.569)
	Elementary School	23	113	1.056 (0.553, 2.019)	0.461(0.194, 1.096)
	High school	23	92	1.298 (0.675,2.494)	0.584(0.250, 1.366)
	Diploma	12	43	1.449 (0.656, 3.199)	0.204(0.054, 0.772)
Income	Above than the World Bank's poverty line	192	20	1	1
	less than the World Bank's poverty line	189	74	3.759(2.205, 6.406)*	2.209(1.181, 4.132)**
unplanned pregnancy	No	355	57	1	1
	Yes	26	37	8.863(4.991,15.739) *	3.004(1.371, 6.583)**

Medical illness	No	338	71	1	1
	Yes	43	23	1.991(1.098, 3.611) *	1.23(0.53, 2.83)
postpartum hemorrhage	No	376	86	1	1
	Yes	8	5	5.995(3.404, 10.102) *	5.068 (1.029, 36.99)**
Death of previous baby	No	364	83	1	1
	Yes	17	11	2.549(1.127, 5.76) *	1.22(0.39, 3.77)
History of depression	No	346	59	1	1
	Yes	35	35	5.864(3.404, 10.102) *	3.22(1.572, 6.606)**
Social support	Strong	111	8	1	1
	Moderate	170	28	2.285(1.005, 5.196) *	2.742(1.065, 7.058)**
	poor	100	58	8.047(3.663, 17.679)*	5.411 (2.090, 14.012)**
Practical partner support	strong	246	35	1	1
	Moderate	94	23	1.72(0.966, 3.063)*	0.743(0.33, 1.985)
	poor	41	36	6.171(3.487,10.921)*	0.812(0.33, 1.985)
Financial Struggle	No	58	369	1	1
	Yes	12	36	19.08(9.38, 38.804) *	6.433(2.65, 15.57) **
Financial support from the partner	Yes	374	74	1	1
	No	7	20	14.44(5.894, 35.380) *	1.93(0.447, 8.33)
Partner's preference of the baby's sex	Yes	280	52	1	1
	No	101	42	2.239(1.405, 3.568) *	0.28(0.66, 2.41)

Domestic	No	351	73	1	1
violence	Yes	30	21	3.366(1.825, 6.207) *	1.44(0.66, 3.399)

**indicates variables having P-value <0.25 in bivariate analysis and ** indicates variables having P-value <0.05 in multivariable logistic regression model.*

6. Discussion

The study aimed to investigate the prevalence of postpartum depression among women in Addis Ababa, Ethiopia, revealing a prevalence of 19.8%. This figure aligns with global and regional estimates, falling within the reported rates in the country(17). Studies in Gondar and Mizan Aman reported slightly higher prevalence rates, affirming the burden of postpartum depression in the region (7).

The study's prevalence also aligns with rates observed in neighboring regions like Enugu, southeast Nigeria, indicating shared cultural and contextual factors influencing postpartum depression prevalence(18,19). Discrepancies in prevalence rates, such as the higher rates in Khayelitsha, South Africa, and lower rates in Norway and Germany, can be attributed to varying sample characteristics, study designs, and cultural nuances (20).

Moreover, economic factors play a significant role in postpartum depression risk. Studies consistently highlight the association between low income and an increased risk of postpartum depression, with varying magnitudes of association across regions like the Arab region, Eritrea, and China(8). The impact of economic disparities on postpartum depression underscores the importance of considering socioeconomic factors in identifying at-risk populations.

Stressful life events and social support play pivotal roles in the development of postpartum depression, as evidenced by various studies. Research in Bahir Dar and Ahvaz highlighted a 4-fold and 3.26-fold higher risk, respectively, of postpartum depression among individuals experiencing stressful life events (24). Financial struggles, a common stressor, have been identified as a distinct risk factor for postpartum depression due to the stress and hardship they entail.

Similarly, studies from India and China demonstrated stark associations between poor social support and heightened risks of postpartum depression. Individuals lacking strong social support exhibited a 10-fold and 2.5-fold higher risk in the respective studies. This study further echoes these findings, revealing a 5.4-fold higher likelihood of postpartum depression in individuals with poor social support(26).

Adequate social support is crucial in mitigating the risks of postpartum depression, providing essential emotional, practical, and informational resources that can help individuals navigate the challenges of the postpartum period (23). The consistent alignment among these studies underscores the significant role of social support in preventing postpartum depression.

Multiple studies consistently demonstrate that marital status significantly affects the likelihood of postpartum depression. Being unmarried or living without a partner is linked to increased risks of postpartum depression, with marriage serving as a protective factor (30). Similarly, unplanned

pregnancies are associated with a higher risk of postpartum depression due to feelings of unpreparedness and unexpected challenges(29).

Postpartum hemorrhage is another significant risk factor for postpartum depression, as individuals experiencing PPH face a notably higher risk of developing depressive symptoms. This stressor contributes to emotional and psychological strain, elevating the likelihood of postpartum depression (20).

Moreover, a history of depression, whether prenatal or preexisting, significantly increases the risk of postpartum depression (22). Women with a depression history have substantially higher risks of experiencing postpartum depression, emphasizing the importance of addressing mental health throughout the perinatal period (25).

7. Conclusion

In This study has yielded profound insights into the prevalence and factors associated with postpartum depression among women in the postpartum period. The findings reveal a high prevalence rate, underscoring the significant and pervasive nature of postpartum depression as a pressing mental health concern. Notably, a substantial proportion of postpartum depression cases remain undetected, reflecting the hidden burden of this condition within the postpartum population. Factors such as being single, income below the poverty line, unplanned pregnancy, financial struggles, a history of depression, poor social support, and experiencing postpartum hemorrhage have demonstrated statistical significance in relation to postpartum depression. These findings emphasize the importance of considering these factors in identifying at-risk women and providing appropriate support and interventions during the postpartum period.

Moreover, the qualitative study component has unveiled key themes shedding light on the challenges surrounding postpartum depression care. These themes encompass a Limited knowledge about postpartum depression, Inadequate Emphasis on Postpartum Care and Integration of Postpartum Depression, time constraints and workload, and communication challenges. These findings underscore the existing gaps and areas for improvement in healthcare systems and emphasize the need to enhance the identification, management, and support for women experiencing postpartum depression. The prevalent yet undetected nature of postpartum depression serves as a poignant reminder of the critical barriers hindering its diagnosis, as illuminated in the qualitative part of this study.

In summary, this study significantly contributes to our understanding of the high prevalence, associated factors, and undetected burden related to postpartum depression. The findings hold the potential to inform the development of targeted interventions and drive improvements in healthcare systems, ultimately enhancing postpartum mental health support and improving the well-being of postpartum women.

8. Recommendations

Based on the findings of the study, here are some recommendations to address the identified challenges and improve the diagnosis and management of postpartum depression in primary healthcare settings:

1. **Increase awareness and education:**It may be fruitful to raise awareness among healthcare professionals, policymakers, and the general public about the prevalence and impact of Postpartum Depression. Education programs and campaigns can help improve knowledge and understanding of the condition, its risk factors, and the available support options.
2. **Strengthen social support networks:** Enhancing social support for postpartum women is crucial in mitigating the risk of Postpartum Depression. Collaborative efforts involving healthcare providers, family members, community organizations, and support groups can help create a supportive environment that fosters emotional well-being and reduces stressors.
3. **Comprehensive Postpartum Care:** It may be valuable to prioritize comprehensive postpartum care, which includes mental health support. By integrating standardized procedures for postpartum depression screening into routine postpartum appointments, healthcare providers can proactively identify and address mental health concerns, providing appropriate support and interventions.

9. Limitation of the study

Because the study employed a cross-sectional design, it does not establish a cause-and-effect or temporal relationship. Additionally, due to the sensitive nature of mental health issues, social desirability bias may have been introduced.

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