Socio-Demographic Factors Associated with Postpartum Depression Among Woman Delivering in Banadir hospital Mogadishu, Somalia

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Abstract:

➢ *Background:*

Postpartum depression (PPD) is a significant global mental health issue, affecting 10-15% of women after childbirth. While its prevalence is well documented worldwide, the socio-demographic factors influencing PPD in Somalia remain understudied. This study explores the impact of socio-demographic variables on PPD among women delivering at Banadir Hospital, Mogadishu, Somalia, a setting influenced by distinct socio-economic and cultural factors.

➢ *Methods:*

A mixed-methods approach was employed to investigate the relationship between socio- demographic variables and PPD. Quantitative data were collected using the Edinburgh Postnatal Depression Scale and structured questionnaires, while qualitative data were gathered through focus group discussions. Stratified random sampling was used for participant selection, and data analysis involved descriptive statistics (SPSS V20.0 and MS Excel) and thematic analysis for qualitative insights.

➢ *Results:*

The findings revealed that the majority of respondents were aged between 24-29 years (74 women, 44.04%), followed by those aged 18-23 years (62 women, 36.9%), while the least represented age group was 42-47 years (5 women, 2.38%). In terms of marital status, 81 women (48.21%) were married, 69 women (41.01%) were single, 16 women (9.52%) were divorced, and 2 women (1.19%) were widowed. Regarding education, most had primary education (92 women, 54.76%), followed by secondary education (39 women, 23.21%), while 28 women (16.67%) had no formal education, and only 9 women (5.36%) had attained college or university education. Occupation-wise, 98 women (58.33%) were housewives, 36 (21.43%) were students, 22 (13.1%) were teachers, and the least represented were health workers (4 women, 2.38%).

➢ *Conclusion and Recommendations:*

This study examines the link between postpartum depression and sociodemographic factors among women at Banadir Hospital, Somalia. Younger mothers aged 18–29 years, single women, divorced women, those with lower education levels, and housewives experienced higher prevalence. Targeted mental health interventions, including screening, psychosocial support, and awareness programs, are crucial for early identification and support. Strengthening maternal health services through enhanced screening, counseling, and community-based initiatives can improve postpartum care and overall well-being in this population.

Keywords: *Postpartum Depression, Risk Factors, Maternal Health, Banadir Hospital, Prevalence, Somalia.*

I. INTRODUCTION

Postpartum depression (PPD) is a significant global maternal mental health concern, affecting approximately 13% of mothers within the first year after childbirth. This makes it a leading contributor to the disease burden in women aged 15-44 across all income levels. The impact ofPPD extends beyond the mother, affecting fathers, infants, and the entire family unit.PPD is classified as a major depressive episode (MDE) that begins within four weeks postpartum. The Diagnostic and Statistical Manual of Mental Disorders (DSM-V) defines an MDE as the presence of at least five symptoms for most of the day over a two-week period, causing significant impairment. These symptoms include depressed mood, often accompanied by anxiety, loss of interest or pleasure, changes in appetite and weight, sleep disturbances (typically insomnia), fatigue, feelings of worthlessness or guilt, difficulty concentrating and making decisions, and recurrent thoughts of death or suicide.1

Globally, PPD affects roughly 10-15% of women, typically emerging two to six weeks after delivery and potentially lasting over a year.2 Symptoms include crying, despondency, emotional lability, guilt, sleep problems, and appetite loss. This depression can severely impact a woman's quality of life, social functioning, and economic productivity.

In the United States, the PPD prevalence is 11.5%, lower than the global average, but varies significantly between states (8% to 20.1%). Higher prevalence is observed among unmarried women, smokers during pregnancy, those experiencing multiple stressful life events, American Indian/Alaska Natives, Asian/Pacific Islanders, women with less than 12 years of education, and mothers of low-birthweight or NICU-admitted infants.3 While overall PPD prevalence in the US decreased between 2004 and 2012, it remained unchanged for certain high-risk groups. A significant challenge in the US is underdiagnosis and undertreatment, with over 60% of women with PPD misdiagnosed and approximately 50% of those diagnosed not receiving treatment.4 While PPD in fathers is a topic of ongoing research, a formal diagnosis for paternal PPD does not yet exist. Cesarean section rates do not appear to significantly influence PPD rates.

In Africa, PPD prevalence varies between 10-15% depending on the country, but is significantly higher in low- and lower-middle-income countries, reaching 19.8%.5 Arab communities also report high rates, between 22% and 26.6% 6 Studies across various African nations reveal a wide range of prevalence: from 6.6% in Uganda7 to 61.8% in Limbe, Cameroon.8 Factors contributing to PPD in Africa include intimate partner violence, past psychiatric illness, low maternal literacy, stress, adolescent abuse, anxiety, and prior depression.

Postpartum depression (PPD) significantly impacts maternal well-being and infant development. While global research has identified factors like socio-demographic characteristics, obstetric experiences, and social support as influencing PPD,9 there is limited study on these factors in the Somali context. The socio-cultural environment in Somalia, shaped by conflict and instability, may uniquely affect postpartum recovery. This study aims to fill the gap by exploring the risk factors for PPD among new mothers at Banadir Hospital, providing crucial insights to improve maternal mental health and healthcare services in Somali

Somalia presents a unique context for studying PPD due to conflict, limited healthcare access, and cultural complexities, though research in this area is scarce.10 Somalia faces a severe maternal health crisis, with one of the world's highest maternal mortality rates (MMR) at 692 deaths per 100,000 live births. This translates to a 1 in 22 lifetime risk of maternal death for Somali women. The 2020 Somali Health and Demographic Survey identified postpartum hemorrhage (24.8%), pre-eclampsia/eclampsia (12.9%), obstructed labor (6.9%), unsafe abortion (12.9%), and sepsis (14.9%) as major direct obstetric causes of maternal death, with indirect obstetric causes accounting for an additional 19.8%.11

The main objective of the study was to assess the factors influencing postpartum depression among women giving birth at Banadir Hospital, Mogadishu, Somalia.

II. METHODS

A. Study Design

This study investigated the intricate relationship between socio-demographic factors and postpartum depression (PPD) among mothers at Banadir Hospital in Mogadishu, Somalia. A mixed-methods approach was employed, integrating quantitative and qualitative data collection and analysis to provide a comprehensive understanding of this complex issue. This design allowed researchers to leverage the strengths of both numerical data, providing statistical insights and generalizability, and in-depth exploration of individual experiences and cultural contexts, offering rich, contextualized understanding. The quantitative strand focused on measuring PPD prevalence and severity, identifying potential socio- demographic risk factors through structured surveys and standardized instruments, notably the Edinburgh Postnatal Depression Scale (EPDS). The EPDS, a widely used and validated tool, provided a standardized assessment of PPD symptoms, enabling comparisons and statistical analysis. The qualitative strand explored the lived experiences of mothers, delving into their perceptions, coping mechanisms, and the influence of cultural and social factors on postpartum mental well-being. In-depth interviews and focus group discussions yielded rich, nuanced data, capturing the complexities of individual experiences and cultural contexts surrounding PPD. Integrating these strands offered a holistic understanding, moving beyond risk factor identification to explore the lived realities of affected women.

B. Study Site

The study was conducted at Banadir Hospital in Mogadishu, a crucial healthcare facility providing maternal and child health services. Serving as a mother and child hospital, national referral center, public healthcare facility, and teaching hospital, Banadir Hospital plays a vital role in the region's healthcare system. Its location in Mogadishu makes it a primary access point for women, including those seeking postnatal care. The choice of Banadir Hospital was strategic, recognizing its significance as a major healthcare provider and its accessibility to a diverse population of postpartum women. Its role as a teaching hospital also allows for integrating research findings into clinical practice and training future professionals on recognizing and addressing PPD.

C. Study Population

The study population comprised mothers who had given birth at Banadir Hospital. Participants were recruited from the postnatal clinic, ensuring the sample consisted of women in the immediate postpartum period, the critical time frame for PPD onset. Recruiting from the postnatal clinic offered a convenient and accessible method, as these women were already engaged with the healthcare system for routine check-ups, facilitating recruitment and increasing participation.

D. Sample Size Determination

A sample size of 246 participants was meticulously calculated using Daniel's formula, a standard statistical method for determining appropriate sample sizes. This calculation considered the estimated PPD prevalence, the desired confidence level (typically 95%), and the acceptable margin of error, ensuring sufficient statistical power to detect meaningful relationships between variables and produce reliable, generalizable findings.

E. Inclusion Criteria

Specific inclusion criteria ensured the study focused on the appropriate population. Mothers aged 18 and above who had given birth at Banadir Hospital within the past 6 to 12 months were eligible. The age criterion ensured participants were legally adults capable of informed consent. The 6- to 12-month postpartum timeframe captured the period when PPD is most likely to manifest. Limiting the study to mothers delivering at Banadir Hospital ensured consistency and facilitated recruitment.

F. Exclusion Criteria

Exclusion criteria controlled for confounding factors and prioritized participant well-being. Mothers with a pre-pregnancy history of psychiatric disorders, pre-existing medical conditions affecting mental health, or infants with severe health issues requiring intensive care were excluded. These exclusions aimed to isolate PPD effects, avoid compounding existing mental health issues, and protect mothers facing the additional stress of caring for a seriously ill infant. Mothers unwilling or unable to participate were also excluded, respecting their autonomy.

G. Sampling Technique

A stratified random sampling technique ensured a representative sample. The population was divided into strata based on age, socioeconomic position, and obstetric history. Random sampling within each stratum ensured all subgroups were represented, reducing bias and increasing generalizability. This method is particularly useful in diverse populations, capturing variability and avoiding over- or under- representation of specific groups.

H. Data Collection Tools and Procedure

Data collection involved the EPDS to quantitatively assess PPD symptoms, a questionnaire to gather socio-demographic information, reproductive history, birth experience details, and social support information, and focused group discussions to explore maternal experiences and attitudes regarding PPD. Trained research assistants administered the EPDS and questionnaires, while experienced moderators facilitated the focus groups.

I. Data Analysis Plan

Data analysis involved descriptive and inferential statistics for quantitative data, summarizing sample characteristics and identifying potential risk factors. Content analysis was used for qualitative data, identifying recurring themes and patterns in narratives. The integrated analysis of both data types provided a comprehensive understanding of PPD's contributing factors.

J. Ethical Considerations

Ethical considerations were paramount throughout the study. Before commencing data collection, ethical approvals were obtained fromthe relevant ethics review boards, including those at the Department of Public Health, Mount Kenya University, and Banadir Hospital. All participants provided written informed consent after receiving a clear and comprehensive explanation of the study's objectives, procedures, potential risks and benefits, and their right to withdraw from the study at any time without penalty. Participation was entirely voluntary, and participants were assured of anonymity and confidentiality. All data collected were stored securely, and no identifying information was linked to individual participants. The sensitive nature of the research topic was acknowledged, and appropriate measures were taken to ensure the emotional well-being of the participants. Participants were provided with information about available mental health resources and support services.

III. RESULTS

A. Socio-Demographic Characteristics of Respondents

The socio-demographic characteristics of the respondents were analyzed and are presented in Table 1 below. The findings reveal the following: The majority of the respondents (44.04%) were aged between 24-29 years, while the least (2.38%) were in the age group 42-47 years.Most of the respondents were married (48.21%), followed by single mothers (41.01%). The least represented were widowed women (1.19%).

Table 1 Age and Marital Status of Respondents

Age in years	Frequency	Percentage
18 – 23 years	62	36.9%
24 – 29 years	74	44.04%
30 – 35 years	15	8.92%
36 – 41 years	12	7.14%
42 – 47 years	5	2.38%
Marital Status	Frequency	Percentage
Married	81	48.21%
Single	69	41.01%
Divorced	16	9.52%
Widowed	2	1.19%
Others	0	0%

The analysis further examined the respondents' education, occupation, and monthly income, as shown in Table 2. The majority of the women had primary school education (54.76%), followed by those with secondary school education (23.21%). Only 5.36% had attended college/university.

Table 2 Respondent' S Education

Education level	Frequency	Percentage
No formal education	28	16.67%
Primary school	92	54.76%
Secondary school	39	23.21%
College/university	9	5.36%

B. Regression Analysis: Socio-Demographic Variables and Postpartum Depression

To assess the relationship between socio- demographic variables and postpartum depression at Banadir Hospital, the study employed regression analysis to test the null hypothesis that there is no significant relationship between socio-demographic variables and postpartum depression. The findings, as illustrated in Table 3, indicate a significant relationship, with an F-statistic of 13.738 ($p = 0.000$), confirming that socio- demographic variables have a notable explanatory power. The model's Adjusted R^2 = 0.082 suggests that 8.2% of postpartum depression cases are influenced by these factors. The regression coefficient (B = 0.397, $p = 0.000$) indicates that an increase in socio-demographic risk factors leads to a 0.397 unit increase in postpartum depression scores. The positive Beta value (0.298, $p = 0.000$) further supports the significant impact of variables such as lower education levels, marital status, and economic status on postpartum depression. Given the statistically significant p-values ($p < 0.05$ for all key variables), the study underscores the importance of targeted mental health interventions to support at-risk mothers.

Table 3 Model Statistics for Socio- Demographic Variables (ANOVA, Regression Coefficients)

ANOVA		Sum of Squares	Df	Mean Square		Sig.
					F	
1	Regression	7.779	1	7.779	13.738	.000[b]
	Residual	79.843	141	.566		
	Total	87.622	142			

C. Model Summary

Table 4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.298[a]	0.089	0.082	0.75250

D. Coefficients

Table 5 Coefficients

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	Constant	2.247	.356		6.319	.000
1	culture	.397	.107	.298	3.706	.000

The Adjusted R² value of 0.082 suggests that 20% of the variance in postpartum depression at Banadir Hospital can be explained by socio- demographic variables. Since the p-value is less than 0.05, the null hypothesis is rejected, and it is concluded that there is a significant positive relationship between socio-demographic variables and postpartum depression at Banadir Hospital.

IV. DISCUSSION

This study explored the effects of socio- demographic variables on postpartum depression (PPD) among mothers delivering at Banadir Hospital, Mogadishu, Somalia. The findings revealed that the majority of respondents (44.04%) were aged between 24-29 years, with the least represented group being those aged between 42-47 years. These findings are consistent with study conducted on risk factors of postpartum depression, 12 who noted that younger age groups are more susceptible to PPD symptoms. This may be attributed to the physical, emotional, and social transitions faced by younger mothers as they adapt to motherhood.

Regarding marital status, most women were married (48.21%), followed by single mothers (41.01%), divorced (9.52%), and widowed (1.19%). These findings align with those of the prevalence of postpartum depression, 13 who identified marital status as a relevant factor in PPD risk. Marital support plays a significant role in a mother's emotional well-being, with married women generally receiving more social and emotional support, which may mitigate the risk of developing PPD.

In terms of education, the majority of mothers had primary education (54.76%), followed by secondary education (23.21%), and the least had completed college/university education (5.36%). The role of education in maternal health and decision-making during pregnancy is critical, as educated mothers are generally more knowledgeable about prenatal care and postpartum health. These results align with previous studies that observed similar educational distributions among mothers, with lower levels of education associated with a higher risk of adverse health outcomes. 14,15

The study also assessed the number of pregnancies and history of complications. The majority of mothers (54.76%) had between 1-3 pregnancies, while 23.81% had between 4-8 pregnancies. These findings are consistent with other studies, 16,17 who found that a higher number of pregnancies was often associated with lower rates of PPD, possibly due to greater experience and coping strategies. Furthermore, most mothers (63.1%) reported no complications during their current pregnancy, which aligns with study on Psycho social and psychological interventions for preventing postpartum depression, 18 who found that many women have healthy pregnancies but still experience postpartum mental health challenges.

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Delivery method was another key factor, with 57.14% of mothers delivering vaginally and 42.86% via cesarean section.how Postpartum Depression Effects on Early Interactions, Parenting 19 reported a similar distribution, with vaginal delivery being more common. The mode of delivery can influence PPD risk, with some studies suggesting that cesarean sections may be associated with higher postpartum depression rates due to physical recovery challenges and a perceived lack of control over the birth experience .20

Lastly, the study assessed overall birth experience ratings, with 37.5% of mothers giving a positive rating and 35.11% giving a negative one. This is consistent with studies that 21,22 emphasized the importance of maternal satisfaction with the birth experience as a determinant of postpartum mental health.

➢ Limitations
The study faced several limitations, including cultural sensitivity and stigma around mental health in Mogadishu, which may have led to underreporting of PPD symptoms. The lack of public awareness about postpartum depression further hindered accurate reporting. Additionally, the short duration of the study limited insights into the long-term course of PPD. Variations in healthcare infrastructure, cultural norms, and resource accessibility may affect the generalizability of the findings, and difficulties in recruiting participants from marginalized groups also impacted the results. These factors emphasize the need for more inclusive and culturally sensitive research methods.

V. CONCULUSION

This study highlights the influence of socio-demographic factors on postpartum depression among women delivering at Banadir Hospital. The majority were young, with most aged between 18-29 years, emphasizing vulnerability in early reproductive years. Marital status, education level, and occupation played key roles, with nearly half being married, a majority having only primary education, and most being housewives. Limited social support, low health literacy, and economic dependency may contribute to postpartum depression. Strengthening maternal health programs through educational initiatives, improving access to mental health services, and enhancing social support systems can help mitigate its impact. Empowering women through vocational training and economic opportunities may reduce financial stress and improve mental health outcomes. Future research should explore deeper interactions between these factors to develop more effective prevention and intervention strategies.

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