

Mental disorders during pregnancy and postpartum in Bangladesh: A narrative review

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Abstract

Background and Aims: Bangladesh has made significant progress in declining maternal mortality in recent decades. However, the available evidence on the various maternal mental disorders in the country has not been comprehensively and critically reviewed to date. This narrative review aimed to assess the mental disorders and associated factors during pregnancy and postpartum in Bangladesh.

Methods: A thorough search was performed in PubMed, Scopus, Google, Google Scholar, and BanglaJOL with search terms at the end of January 2024 to identify the original articles published on psychiatric morbidities during pregnancy and postpartum.

Results: This review included 28 empirical studies published between 2007 and 2023 with a sample size ranging from 100 to 39,434. Two studies were published before 2010, 16 studies were published between 2011 and 2020, and 10 studies were published between 2021 and 2023. No countrywide study was noted, the Bangla Edinburgh Postnatal Depression Scale (EPDS-B) was used in 57% of studies, suicidal behavior was assessed in three studies, postpartum depression (PPD) was featured in 16 studies, and three qualitative studies were noted. The prevalence of PPD ranged from 9% to 51.7%. About 46% of mothers had positive scores for common mental disorders. The prevalence of mental disorders was 14.2%; among them mood disorders were present at 6.1% and psychoses were noted at 4.5%.

Conclusions: There are wide variations in the prevalence of maternal mental disorders in Bangladesh from study to study; a lower prevalence was noted when diagnostic tools were used even though no nationwide study with confirmatory diagnostic tools was noted. Studies with nationwide distribution and diagnostic tools are warranted to understand the problem precisely.

KEYWORDS

Bangladesh, maternal mental disorders, maternal suicidal behavior, postpartum depression, pregnancy, psychiatric disorder

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1 | INTRODUCTION

Maternal mental health is an essential component of both maternal and child health. Pregnancy and the postpartum period are associated with a wide range of biological changes and psychosocial stressors that predispose to the development of mental disorders.^{1,2} Conditions such as depression, anxiety, and posttraumatic stress disorder (PTSD) during pregnancy are associated with adverse outcomes, including preterm birth, low birth weight, and neurodevelopmental impairment in infancy and childhood.³ Depression in the postpartum period can interfere with mother–infant bonding, breastfeeding, and child nutrition which may lead the infants and young children vulnerable to malnutrition, infection, and behavioral disorders.⁴ Depression following childbirth is associated with a seven-fold increase in the risk of suicidal behavior.⁵ Despite that, maternal mental health is often neglected, especially in low-resource settings.⁶

Bangladesh is a South Asian country where over 3,000,000 births occur each year.⁷ National statistics suggest that the quality of maternal health care in Bangladesh has improved significantly in the past two decades, as evidenced by reduced maternal morbidity and mortality and improved healthcare utilization.^{8,9} However, this has not been associated with a corresponding expansion of maternal mental health care, largely due to a shortage of resources and a lack of specific planning.¹⁰ Factors such as unplanned pregnancies, intimate partner violence (IPV), traditional attitudes regarding gender preference for children, and family discord may increase the risk of depression and anxiety in Bangladeshi mothers.¹¹ Bangladesh is vulnerable to natural disasters, particularly flooding, which may increase the risk of maternal mental disorders.^{12,13} The psychosocial and economic hardships caused by the COVID-19 pandemic have also exacerbated maternal vulnerability to depression and anxiety in the country.¹⁴

In light of the evidence reviewed above, the Government of Bangladesh has incorporated two recommendations related to maternal mental health in its National Mental Health Strategic Plan for 2020–2030: integration of depression screening into maternal health, and maternal mental health literacy training for healthcare workers.¹⁵ Alongside these planned changes in policy, there has been a recent focus on research into maternal mental health, its correlates, and its consequences in Bangladesh over the past two decades.^{16,17} Available evidence suggests that depression and anxiety affect a significant number of Bangladeshi women during both ante- and postnatal periods and that the consequences of these disorders on child well-being are similar to those reported in other countries.¹⁸

To date, this evidence has not been comprehensively and critically reviewed. Synthesizing the findings of this research would be useful in providing practitioners with key information on maternal mental disorders, identifying future research questions, and informing further policies and plans aimed at integrating mental health into maternal and child health. Therefore, this narrative review was carried out to assess the frequency of mental disorders, and the factors associated with them during pregnancy and the postpartum period in Bangladesh.

2 | METHODS

2.1 | Search details

A thorough search was performed in PubMed, Scopus, Google, Google Scholar, and BanglaJOL with search terms at the end of January 2024 to identify the articles published on psychiatric morbidities during pregnancy and postpartum. “Maternal mental health in Bangladesh,” “maternal mental disorders in Bangladesh,” “psychiatric disorder in pregnancy,” and “mental disorders in postpartum” were used as the search terms. We also scrutinized the references of available articles to include all the possible published papers. Therefore, in addition to the databases we included search engines as local mental health journals are not indexed in PubMed and Scopus.¹⁹

2.2 | Inclusion criteria

Original articles published from inception to search date were included. The study population was limited to Bangladeshi populations currently living in Bangladesh. No age or gender restrictions were applied. In the case of multiple papers from the same project, we included the most informative papers highlighting the mental health aspects.

2.3 | Exclusion criteria

Letter to the editors, book chapters, books, commentaries, case reports, case series, and review articles were excluded from this review.

2.4 | Screening

Articles were initially screened by title then abstract and full text. Articles were selected for the review after considering the inclusion and exclusion criteria. Due to the variations in search engines and databases, we were unable to maintain the stepwise counting of the available articles.

2.5 | Expected outcome variables

We included any paper assessing any mental health condition during pregnancy and postpartum in Bangladesh.

2.6 | Data presentation

We presented descriptive data in frequency and percentages as available in the empirical studies. We mentioned the risk and protective factors as revealed in the studies without considering any summative weightage. No meta-analysis was attempted.

2.7 | Ethical aspects

The review included already available papers; therefore, no ethical approval was sought.

3 | RESULTS

3.1 | Characteristics of the studies

This review included 28 empirical studies published between 2007 and 2023. Two studies were published before 2010, 16 studies were published between 2011 and 2020, and 10 studies were published between 2021 and 2023 (Table 1). Among the 28 studies, 3 were qualitative in design, 4 were cohort studies, 2 were community trials, 2 were longitudinal studies, 16 were cross-sectional studies, and 1 was an online survey (Table 1). International collaboration was noted in 16 studies (57%); 3 studies were noted where all the authors were from outside Bangladesh. About 68% ($n = 19$) of the studies were funded; 2 studies were funded by local funders and 17 studies were funded by global funders (Table 1). Almost all studies employed interviews to collect data from the participants (Table 1). Thirteen studies were conducted in rural settings, 14 studies were conducted in urban settings, and 1 study had overlaps. The sample size ranged from 100 to 39,434.

The Edinburgh Postnatal Depression Scale-Bangla (EPDS-B) was used in 16 (57%) studies, the Structured Clinical Interview for DSM-IV Axis-I Disorders (SCID) was used in two studies, the Self-Reporting Questionnaire-20 (SRQ-20) was used in two studies, the Depression Anxiety Stress Scale-21 (DASS-21) Bangla, the Patient Health Questionnaire-9 (PHQ-9), and the Mini International Neuropsychiatric Interview Scale-7 (MINI 7) were used in one study each. Among the instruments, SCID and MINI 7 were diagnostic tools; others specially EPDS-B were screening tools.

No countrywide study was noted. Four studies were conducted in Chandpur, one in Chattogram, nine in Dhaka, two studies from one community trial in Gaibanda and Rangpur, four in Mymensingh, two studies in Rajshahi, and one each in Nilphamari, Rajbari, and Sirajganj.

Suicidal behavior was assessed in three studies,^{27,32,35} postpartum depression (PPD) among fathers was revealed in one study,⁴⁷ PPD among mothers was assessed in 16 studies,^{21,22,25,26,28–31,33,39,41–46} antenatal morbidity was noted in four studies,^{23,27,36,38} and perinatal morbidity was assessed in three studies.^{24,37,42}

3.2 | Qualitative studies

The three qualitative studies discussed postpartum maternal mental health,^{24,26,46} two studies evaluated PPD (risk factors in Mymensingh and health-seeking behavior in Dhaka),^{26,46} and one discussed health-seeking behavior during the perinatal period in Rajbari.²⁴

3.3 | Prevalence of PPD

The prevalence of postpartum depression was found in 12 articles (Tables 1 and 2).^{21,22,25,28–31,33,39,43–45} The prevalence of PPD ranged from 9%²⁸ to 51.7%.³⁰ It revealed a wide range among studies even though used the same instrument, that is, EPDS. It ranged from 11% in the Mymensingh cohort²⁵ to 39.4% in the Dhaka slum.²² Among the 12 studies, EPDS-B was used to determine depression in 10 studies (Table 2). The study conducted by Hossain et al.³⁰ in Sirajganj used SRQ-20 to determine depression whereas the study of Gausia et al.²⁸ used SCID-CV to determine depression.

3.4 | Risk factors of PPD

Different studies identified different risk factors like having age above 30 years,²¹ first-time delivery,²¹ job problems due to pregnancy,^{21,22} high blood pressure,²¹ neonatal problems,²¹ poor support from family,²¹ having a job after delivery,²² loss of a previous child in forms of abortion, stillbirth or death,²² taking a loan to meet the expenses of the child delivery,²² antenatal mood symptoms,²² IPV,^{22,30,31,33} maternal age,³⁰ food insecurity in the family where the mother was living,³⁰ having a difficult child,³³ physical abuse,³³ and bad spousal relationship,³³ postpartum physical illness,⁴¹ unintended pregnancy,⁴³ recent life events,⁴⁵ and perceived stress.⁴⁵

The only study assessing PPD among 461 fathers from different districts of Bangladesh measured EPDS-B and revealed that 35.2% had moderate and 17.1% had severe depressive symptoms. The study found associations between depression and the age of the fathers.⁴⁷

3.5 | Prevalence of psychiatric disorder

One study in Dhaka assessed 264 mothers with children up to 5 years of age to determine common mental disorders (CMD). About 46% of mothers had positive scores for CMD. Several factors were identified like a higher age, low educational attainment, low social status, food insecurity, and under-nutrition of either mother or child.³⁴

3.6 | Antenatal period

One study with 361 pregnant women at 34–35 weeks assessed depression in Chandpur in 2005. The prevalence of depression among antenatal mothers was 33%. History of physical abuse, unhelpful family (husband/or mother-in-law), and having expectations of a male child from the family members were found as risk factors for depression.²⁷ A study in Mymensingh assessed 720 women from the third trimester to 6–8 months postpartum. It revealed the prevalence of depression and anxiety was 18% and 29% during the antenatal period. It found bad spousal relationships,

TABLE 1 Characteristics of the studies (n = 28).

SN	Author	Year	Study place	Method	Sample source	Sample	Sample size	Measuring instrument	Data collection year	DC technique	Data collection place	Major domain	Part of pregnancy	Funding	International collaboration	Findings
1	Akter et al. ²⁰	2021	Urban	Cross-sectional	EPI centers	Mothers	126	MINI-7	2018–2019	Interview	Dhaka	Obsessive compulsive disorder (OCD)	Post-partum	No	No	This study assessed the demography and clinical characteristics of OCD started during the postpartum period. A previous history of OCD was related to the onset of OCD in postpartum.
2	Alam et al. ²¹	2021	Urban	Cross-sectional	Community based	Facility delivered mothers of Dhaka city within 1 year	291	EPDS-B	2019	Interview	Dhaka	PPD	Post-partum	No	Yes	The prevalence of PPD within 1 year of delivery was 29.6%. It revealed having age above 30 years, first time delivery, job problems due to pregnancy, high blood pressure, neonatal problem, poor support from family as risk factors. It also found better family income and less time in social media as protective factors.
3	Azad et al. ²²	2019	Urban	Cross-sectional	Slum	Postpartum mother with a delivery up to 1 year	376	EPDS-B	2017	Interview	Dhaka	PPD	Post-partum	Local	Yes	The rate of PPD was 39.4% within a year of childbirth. It found that having job after delivery, loss of job for pregnancy, loss of previous child in forms of abortion, stillbirth or death, loan for child delivery, antenatal mood symptoms, and intimate partner violence as risk factors.

TABLE 1 (Continued)

SN	Author	Year	Study place	Method	Sample source	Sample	Sample size	Measuring instrument	Data collection year	DC technique	Data collection place	Major domain	Part of pregnancy	Funding	International collaboration	Findings
4	Begum and Biswas ²³	2020	Urban	Cohort	Clinic sample	Pregnant women	435	EPDS-B	2008–2009	Interview	Chat-togram	Depression	Antenatal	No	No	This was a prospective cohort study that assessed the change of depressive symptoms in different trimesters. It found that about 58% of women had depression in at least one trimester, higher in first trimester and gradually reduced in third trimester. About 13% had depressive symptoms during the whole antenatal period.
5	Dutta et al. ²⁴	2022	Rural	Qualitative	Community	Mothers and services providers	21		2017–2018		Rajbari	Health-seeking behavior	Perinatal	Global	No	This qualitative study was done to see the help-seeking behavior of perinatal mothers. Two-third of participants do not know about the services for mental health problems during the perinatal period and only one participant sought help from a gynecologist.
6	Edhborg et al. ²⁵	2011	Rural	Cohort	Community	Mothers and infants at 2–3 months	672	EPDS-B, SAI, PBQ	2007–2008	Interview	Mymensingh	Depression and anxiety	Post-partum	Global	Yes	This was a population-based study that assessed the effect of maternal depression and anxiety on child–mother relationship. The study found 11% had depression, 35% had anxiety, 3.4%

(Continues)

TABLE 1 (Continued)

SN	Author	Year	Study place	Method	Sample source	Sample	Sample size	Measuring instrument	Data collection year	DC technique	Data collection place	Major domain	Part of pregnancy	Funding	International collaboration	Findings
7	Edhborg et al. ²⁶	2015	Rural	Qualitative	Community	Mothers at 2–3 months of postpartum	21	EPDS-B	2009		Mymensingh	PPD	Post-partum	Global	Yes (no author from Bangladesh)	This qualitative study assessed experience of 21 mothers with PPD during 2–3 months of delivery in rural areas. It found three major areas mentioned as "family dynamics, living at the limits of survival, and role of the cultural context after childbirth." It found that problematic relation with family members and economic hardship as risk factors for PPD.
8	Gausia et al. ²⁷	2009	Rural	Cross-sectional	Community	34–35 weeks of pregnancy	361	EPDS-B	2005	Interview	Chandpur	Suicide and depression	Antenatal	Global	Yes	The prevalence of depression among antenatal mothers was 33% and 14% of the depressed mother had self-harm ideations. History of physical abuse, unhelpful family

TABLE 1 (Continued)

SN	Author	Year	Study place	Method	Sample source	Sample	Sample size	Measuring instrument	Data collection year	DC technique	Data collection place	Major domain	Part of pregnancy	Funding	International collaboration	Findings
9	Gausia et al. ²⁸	2007	Urban	Cross-sectional	EPI center	Mothers at 6–8 weeks	100	SCID	2005	Interview	Dhaka	PPD	Post-partum	Global	Yes	This study validated the EPDS in Bangla. It found the prevalence of PPD was 9%. It revealed an acceptable internal consistency (Cronbach's alpha coefficient 0.84) and receiver operating characteristic (ROC) cut-off score (10) with 89% sensitivity and 87% specificity.
10	Hamadani et al. ²⁹	2012	Rural	Longitudinal	Community	Mothers at 6–8 weeks of postpartum and their children	488	EPDS-B	2007–2008	Interview and physical examination	Chandpur	Maternal morbidity and child development	Post-partum	Global	No	This study assessed association between maternal morbidity and child development. It found the prevalence of depression was 17% at 6 weeks and 11% at 6 months.
11	Hossain et al. ³⁰	2020	Rural	Cross-sectional	Community	Women with children between 6 and 16 months	591	SRQ-20	2017	Interview	Ullapara, Sirajganj	PPD	Post-partum	Global	Yes	The prevalence of PPD was 51.7%. PPD was associated with maternal age, food insecurity in the living family, and interpersonal violence against mothers.

(Continues)

TABLE 1 (Continued)

SN	Author	Year	Study place	Method	Sample source	Sample	Sample size	Measuring instrument	Data collection year	DC technique	Data collection place	Major domain	Part of pregnancy	Funding	International collaboration	Findings
12	Islam et al. ³¹	2017	Rural	Cross-sectional	Community	Vaccination corner	426	EPDS-B	2015–2016	Interview	Chandpur	IPV and PPD	Pregnancy post-partum	Global	Yes	This study assessed the associated between IPV and PPD. The prevalence of depression was 35.2%. different forms of IPV were associated with PPD.
13	Islam et al. ³²	2020	Rural	Cross-sectional	EPI center	Postpartum mother with a delivery up to 6 months	426	EPDS-B	2015–2016	Interview	Chandpur	Suicidal ideation	Post-partum	Global	Yes	This survey was conducted to determine the mediation role of depression in the relationship of IPV and suicidal thoughts. The prevalence of suicidal thoughts among mothers within the 6 months of postpartum was 30.8%. PPD and IPV were associated with suicidal thoughts.
14	Kabir et al. ³³	2014	Rural	Longitudinal	Community	Mothers at 6–8 months of postpartum	660	EPDS-B	2008–2009	Interview	Mymensingh	IPV and PPD	Post-partum	Global	Yes	This study assessed IPV, maternal depression, and associated factors. It revealed that 32% of mothers had depression. Having a difficult child, physical abuse, and bad spousal relationship were associated with maternal depression.
15	Khan and Flora ³⁴	2017	Urban	Cross-sectional	Community	mothers with children up to 5 years of age	264	SRQ-20 (cut-off of 7)	2013	Interview	Dhaka	Common mental disorder (CMD)	Mothers with children up to 5 years of age	No	No	This study assessed the rate and associated factors of CMDs among mothers with

TABLE 1 (Continued)

SN	Author	Year	Study place	Method	Sample source	Sample	Sample size	Measuring instrument	Data collection year	DC technique	Data collection place	Major domain	Part of pregnancy	Funding	International collaboration	Findings
16	Li et al. ³⁵	2021	Both	Cross-sectional	Hospital	Pregnancies during adolescence	940		2018–2019	Interview	Several districts	Suicide attempt		Global	No (no author from Bangladesh)	Among the respondents, 6.5% had suicide attempts during the last year and 88.5% of the attempts were performed within the year of pregnancy. Perceived bad health was found as risk factors and perceived social supports were found as protective factors for suicide attempts.
17	Nasreen et al. ³⁶	2011	Rural	Cohort	Community	From the third trimester of pregnancy to 6–8 months postpartum	720	EPDS-B	2008–2009	Interview	Mymensingh	Depression and anxiety	Antenatal	Global	Yes	The study found the prevalence of depression and anxiety was 18% and 29% during the antenatal period. It revealed bad spousal relationship, forceful intercourse, and physical abuse by partner were risk factors and literacy of women was found to be protective factor.

(Continues)

TABLE 1 (Continued)

SN	Author	Year	Study place	Method	Sample source	Sample	Sample size	Measuring instrument	Data collection year	DC technique	Data collection place	Major domain	Part of pregnancy	Funding	International collaboration	Findings
18	Parveen et al. ³⁷	2015	Urban	Cross-sectional	Hospital setting	Perinatal woman	197	SCID-CV	2012–2013	Interview	Dhaka	Perinatal morbidity	Perinatal	No	No	This study assessed demography and other related factors for psychiatric disorders among mothers during the perinatal period. The prevalence of mental disorders was 14.2%; mood disorders were present in 6.1%, and psychosis in 4.5%.
19	Shaun et al. ³⁸	2022	Urban	Cross-sectional	Community	Pregnant women	481	PHQ-9	2021	Interview	Nilphamari	Sleep and depression	Antenatal	No	No	This study assessed the relationship between sleep quality and depressive symptoms during the antenatal period. About 9% of women had depression and about 39% had sleep problems. Depressive symptoms and academic attainment more than 10 years were associated with bad sleep.
20	Sharmin et al. ³⁹	2019	Urban	Cohort	Community	Mothers and infants	287	EPDS-B		Interview	Dhaka	PPD	Post-partum	Global	No	The prevalence of PPD was 25.7%. The study found that PPD was associated with infant health and childhood malnutrition.
21	Sharmin et al. ⁴⁰	2022	Urban	Online survey	Community	Pregnant ladies and breastfeeding mothers	480	DASS-21, and CAS		Self-report		Depression, anxiety, and stress	Pregnancy and post-partum	No	Yes	This survey assessed the mental health status of 201 pregnant ladies and 279 breastfeeding mothers during

TABLE 1 (Continued)

SN	Author	Year	Study place	Method	Sample source	Sample	Sample size	Measuring instrument	Data collection year	DC technique	Data collection place	Major domain	Part of pregnancy	Funding	International collaboration	Findings
22	Surkan et al. ⁴¹	2017	Rural	Community trial	Community	Married women	39,434	Self-formulated questions from PHQ-9 and CES-D	2001–2007	Interview	Gaibandha and Rangpur	PPD	Pregnancy and postpartum	Global	Yes	This study assessed the association between illness of several systems and depression. It found that postpartum illnesses were associated with depression at 6 months of postpartum.
23	Surkan et al. ⁴²	2016	Rural	community trial	Community	Mothers who lose their children during peripartum	1914	PHQ-9 and CES-D	2001–2007	Interview	Gaibandha and Rangpur	PPD	Perinatal	Global	Yes	This study analyzed data from a population-based study and assessed the effect of child loss. Women who lost their child during postpartum had higher odds of depression in comparison to others who did not lose their children.

(Continues)

TABLE 1 (Continued)

SN	Author	Year	Study place	Method	Sample source	Sample	Sample size	Measuring instrument	Data collection year	DC technique	Data collection place	Major domain	Part of pregnancy	Funding	International collaboration	Findings
24	Tasnim et al. ⁴³	2021	Urban	Cross-sectional	Primary health centers	Mothers within 6 months of postpartum	497	EPDS-B	2019	Interview	Rajshahi	PPD	Post-partum	Local	No	This study assessed the association between intention of pregnancy and PPD. The prevalence of PPD was 34% and it was significantly common among mothers with unintended pregnancy.
25	Tasnim et al. ⁴⁴	2023	Urban	Cross-sectional survey	Primary health center	Mothers during the initial six months after the delivery	497	EPDS-B	2019	Interview	Rajshahi	Domestic violence and PPD	PPD	No	No	This study was conducted to determine the role of perceived stress while explaining the association between domestic violence and PPD. The prevalence of PPD was 34%. The study found that perceived stress acted as a partial mediator in the association of domestic violence and development of PPD.
26	Valdes et al. ⁴⁵	2021	Urban	Cross-sectional	Community	Mothers at 6 months after delivery	235	EPDS-B		Interview	Dhaka	PPD	Post-partum	Global	No (No author from Bangladesh)	The prevalence of high-risk PPD was 24.3%. Recent life events, perceived stress, and household facilities were identified as associated factors.

TABLE 1 (Continued)

SN	Author	Year	Study place	Method	Sample source	Sample	Sample size	Measuring instrument	Data collection year	DC technique	Data collection place	Major domain	Part of pregnancy	Funding	International collaboration	Findings
27	Williams et al. ⁴⁶	2017	Rural	Qualitative	Slum	Mothers and healthcare providers	70		2014		Dhaka	PPD	Post-partum	Global	Yes	It assessed the perceptions regarding PPD and pattern of healthcare-seeking behavior in Bangladesh.
28	Yeasmin et al. ⁴⁷	2023	Urban	Cross-sectional	Hospital setting	Fathers	461	EPDS-B	2021–2022	Interview	Several districts	Depression among fathers	Post-partum	No	Yes	This study assessed the depressive symptoms among fathers after childbirth. It revealed that 35.2% had moderate and 17.1% had severe depressive symptoms. The study found associations between depression and mode of delivery and age of the fathers.

Abbreviations: CAS, Coronavirus Anxiety Scale; DASS-21, Depression Anxiety Stress Scale -21; EPDS-B, Edinburgh Postnatal Depression Scale- Bangla; EPI, Expanded Program on Immunization; IPV, Intimate Partner Violence; MINI 7, Mini International Neuropsychiatric Interview Scale-7; PBQ, Postpartum Bonding Questionnaire; PHQ-9, Patient Health Questionnaire-9; PPD, Postpartum depression; SAI, State Anxiety Inventory; SCID-CV, Structured Clinical Interview for DSM-IV Axis-I Disorders; SRQ-20, Self-Reporting Questionnaire-20.

TABLE 2 Prevalence of postpartum depression.

SN	Study	Study place	Method	Sample source	Duration	Sample size	Measuring instrument	Data collection year	Data collection place	Prevalence (%)
1	Alam et al. ²¹	Urban	Cross-sectional	Community	1 year	291	EPDS-B	2019	Dhaka	29.6
2	Azad et al. ²²	Urban	Cross-sectional	Slum	1 year	376	EPDS-B	2017	Dhaka	39.4
3	Edhborg et al. ²⁵	Rural	Cohort	Community	2–3 months	672	EPDS-B, SAI, PBQ	2007–2008	Mymensingh	11
4	Gausia et al. ²⁸	Urban	Cross-sectional	EPI center	6–8 weeks	100	SCID	2005	Dhaka	9
5	Hamadani et al. ²⁹	Rural	Longitudinal	Community	6 weeks	488	EPDS-B	2007–2008	Chandpur	17
6	Hossain et al. ³⁰	Rural	Cross-sectional	Community	6–16 months	591	SRQ-20	2017	Sirajganj	51.7
7	Islam et al. ³¹	Rural	cross-sectional	Community	6 months	426	EPDS-B	2015–2016	Chandpur	35.2
8	Kabir et al. ³³	Rural	Longitudinal	Community	6–8 months	660	EPDS-B	2008–2009	Mymensingh	32
9	Sharmin et al. ³⁹	Urban	Cohort	Community	6–8 months	287	EPDS-B		Dhaka	25.7
10	Tasnim et al. ⁴³	Urban	Cross-sectional	primary health centers	6 months	497	EPDS-B	2019	Rajshahi	34
11	Tasnim et al. ⁴⁴	Urban	cross-sectional survey	primary health center	6 months	497	EPDS-B	2019	Rajshahi	34
12	Valdes et al. ⁴⁵	Urban	Cross-sectional	Community	6 months	235	EPDS-B		Dhaka	24.3

forceful intercourse, and physical abuse by the partner were risk factors, and the literacy of women was found protective for developing depression and anxiety.³⁶ One study in Chattogram with a cohort of 435 pregnant women assessed changes in depressive symptoms in different trimesters of the antepartum period. It found that about 58% of women had depression in at least one trimester, higher in the first trimester (35.4%) and gradually reduced in the third trimester (second trimester 33.7% and third trimester 30.1%). About 13% had depressive symptoms during the whole antenatal period.²³ A study in Nilphamari assessed sleep disturbances and depression among 481 pregnant women. About 9% of women had depression and about 39% had sleep problems. Depressive symptoms were associated with bad sleep.³⁸

3.7 | Perinatal period

Three studies^{24,37,42} were noted during the perinatal period including one qualitative study.²⁴ One study analyzed data from a rural cohort of 1914 women who lost their children in Gaibanda and Rangpur and assessed the effect of child loss and depression. Women who lost their child during postpartum had higher odds of depression in comparison to others who did not lose their children.⁴² Another study assessed 197 perinatal women and determined the prevalence of psychiatric disorders. The prevalence of mental disorders was 14.2%; among the disorders, mood disorders were present at 6.1%, followed by psychosis at 4.5%.³⁷ The study revealed the prevalence of major depressive disorder as 3.6%.

3.8 | Suicidal behavior

Suicidal behavior was assessed in three studies.^{27,32,35} A study of 361 pregnant women of Chandpur found that 17 depressed women had self-harm ideations measured by EPDS-B.²⁷ Another study of 940 adolescent mothers found that 6.5% had suicide attempts in the last year and 88.5% of the attempts were noted within a year of pregnancy.³⁵ One recent study of 426 postpartum mothers at 6 months of delivery in Chandpur found that 30.8% of women had suicidal thoughts within the 6 months of postpartum.³² Perceived bad health was found as a risk factor for suicide attempts and perceived social support was found as a protective factor.³⁵

4 | DISCUSSION

4.1 | Major findings of the study

This review revealed encouraging trends related to maternal mental health research in Bangladesh. The number of published papers on maternal mental disorders has been increasing in recent years, and there are studies with adequate numbers of samples in both urban and rural areas, including cohort, longitudinal, and community trials.

A majority of studies (57%) were conducted with international collaboration and about 7 in 10 studies were funded. Most of the studies utilized EPDS-B, a standardized instrument adapted to the local language, for assessing postpartum depression, which increases the reliability of the results obtained.

Most studies included in this review were focused on PPD. The prevalence of postpartum depression ranged from 9%²⁸ to 51.7%.³⁰ Gausia et al.²⁸ used SCID-CV diagnosis which is a diagnostic tool. On the other hand, Hossain et al.³⁰ (2020) used SRQ-20 which is a screening tool. Parveen et al.³⁷ found the prevalence of PPD 2.6%. As the majority of the studies, EPDS-B for measuring depression, it is important to consider that it is a screening tool for depression that may result in a higher prevalence. The rate revealed by studies using EPDS-B ranged from 11%²⁵ to 39.4%.²² Another study assessing the CMD among mothers with children up to 5 years found a prevalence of 46% by SRQ-20.³⁴ On the other hand, one study found the prevalence was 14.2% by using SCID.³⁷ Study methodology significantly affected estimates of prevalence: studies using diagnostic tools yielded lower prevalence than those using screening instruments. This highlights the need for a two-step process in which initial screening is followed by a structured evaluation of those screening positive.⁴⁸ This would yield more accurate estimates of the prevalence of CMD during pregnancy and the postpartum period. Following the two-step process among nationwide participants would be necessary to measure the prevalence.

There are relatively fewer studies of pre- or postnatal anxiety disorders, but the available data suggest that about 30%–40% of antenatal women have significant symptoms of anxiety. A recent meta-analysis found that over 20% of women in low- and middle-income countries have anxiety disorders during pregnancy.⁴⁹ Like depression, antenatal anxiety can lead to adverse pregnancy outcomes⁵⁰ and impair breastfeeding.⁵¹ There is a need for more in-depth studies of the correlates, course, and consequences of antenatal and postnatal anxiety in women in Bangladesh.

4.2 | Risk and protective factors for maternal mental illness in Bangladesh

Medical and psychosocial factors associated with maternal mental morbidity have also been delineated in the existing research. Both medical complications during pregnancy or childbirth and psychosocial adversities are associated with elevated rates of postpartum depression. However, most of the risk factors identified were psychosocial in nature. These could be divided into two categories: familial and nonfamilial. Familial factors include marital disharmony, conflicts with in-laws, cultural expectations regarding the gender of the child, IPV, and lack of support. Broader social risk factors include low income, job loss due to pregnancy, recent stressful life events, and economic and food insecurity. On the other hand, education and social support were protective against antepartum and postpartum depression. These findings are consistent with existing data on risk factors for PPD.² They are also in line with current models of

maternal depression, in which familial and social stressors act as signals of a lack of resources necessary for the well-being of the mother and child. These signals of adversity activate biological and psychological processes that lead to the onset of depression.^{52–54}

The reported association between disturbed sleep and maternal depression³⁸ is clinically significant. Studies from other countries suggest that difficulties in sleep are strongly predictive of PPD.⁵⁵ Thus, in primary or low-resource settings, antenatal women could be screened for sleep problems. If these are present, it would indicate the need for further monitoring and early identification of depression and anxiety.

4.3 | Implications of study results

The foremost implication of the existing research is the substantial burden of mental disorders in Bangladeshi women during pregnancy and the puerperium. Even using the most conservative estimates, at least 10% of women have significant depressive symptoms, and a similar number may suffer from anxiety disorders. These findings lend urgency to the National Mental Health Strategic Plan's recommendation of screening for depression in all antenatal women. However, screening alone is insufficient unless it is linked to treatments that are available, accessible, affordable, and effective.²⁴

Findings on the risk factors for PPD in women in Bangladesh are important from a public health perspective. They underline the need for both psychosocial interventions and social welfare measures in the prevention and treatment of maternal mental disorders in the Bangladeshi context.⁵⁶ These could be delivered as integrated packages that include a maternal mental health component alongside child nutrition, early infant stimulation, and material or financial support, making use of available community support and resources.⁵⁷ Early psychosocial interventions based on a task-sharing approach could go beyond this and potentially prevent depression or anxiety during pregnancy, even in lower-income settings.⁵⁸ It is also important to identify and protect women from IPV during pregnancy, given its strong association with maternal mental health in Bangladeshi women.^{22,44}

Intervention as well as preventive measures should be attempted based on the identified risk factors. Both Government agencies and nongovernment organizations could focus on short-term financial help for working mothers living in poor conditions. Risk factors should also be highlighted in maternal mental health literacy training for healthcare workers so that they can identify risky mothers and refer them to proper health channels.

Finally, those studies that have evaluated both mothers and children have found that maternal mental health is significantly associated with child outcomes such as mother–infant bonding²⁵ and nutritional status.³⁹ These findings replicate those seen in other countries and suggest that maternal mental health has population-level implications in terms of affecting child physical and mental health.⁵⁹ These results indicate the need to integrate maternal mental health into infant health programs, such as the “Shishu Bikash

Kendro" or SBK ("Child Development Centres" in Bangla). These centers have been included as a key component of Bangladesh's national mental health plan. Identifying maternal mental disorders in children with malnutrition, recurrent infections, or behavioral disorders could lead to their effective treatment at the SBK or primary care level, and improve a wide range of child-related health indicators.

4.4 | Gaps in the existing research

The research reviewed in this paper yields valuable information on the distribution and correlates of maternal mental illness in Bangladesh. Nevertheless, there are certain gaps in the existing literature that need to be addressed in the near future. First, only three studies have examined the occurrence of suicidal ideation or behavior, and there are no data on long-term outcomes, including suicides, in this population. Second, most of the research is on depression. There is a need for further research on the prevalence and risk factors for other peripartum mental disorders, particularly anxiety disorders, PTSD, and mother–infant bonding disorders. Third, there is a paucity of interventional studies in the Bangladeshi setting. Preliminary evidence suggests that integrated mother and child health packages involving local health personnel and community members may improve maternal depression, but such interventions need to be scaled up and tested in larger numbers of women.^{57,60} Fourth, most of the included studies are cross-sectional in nature. There is a need for better characterization of the medium- and long-term course and outcome of maternal mental disorders in Bangladesh, especially since they can affect child health and development.³⁹ Finally, a better understanding of protective factors in maternal mental health in the Bangladeshi context is required. Identifying individual, familial, and community factors that increase resilience to depression and anxiety in this population could lead to better preventive and treatment strategies.

4.5 | Strengths and limitations

To the best of the authors' knowledge, this is the first review assessing maternal psychiatric morbidity in Bangladesh. We attempted to include all the published studies in this review to gauge the overview of the status. However, this review has several limitations. First, the search was not systematic, and the quality of studies was not assessed to compare the results. Therefore, there may be some exclusions of published articles. Second, search, screening, checking, and data extraction were performed by a single person (SMYA). Cross-checking may reveal unintended mistakes (if any). Third, because of the heterogeneity in study methods, it was not possible to perform a formal meta-analysis and provide exact estimates or confidence intervals for the prevalence of any maternal mental disorder.

5 | CONCLUSIONS

This narrative review revealed that there are wide variations in the prevalence of maternal mental disorders in Bangladesh from study to study specially a lower prevalence was noted when diagnostic tools were used. A nationwide epidemiological study with confirmatory diagnostic tools has yet to be noted. Studies with nationwide distribution and diagnostic tools are warranted to understand the problem precisely.

AUTHOR CONTRIBUTIONS

S. M. Yasir Arafat: Conceptualization; investigation; methodology; formal analysis; writing—review and editing; writing—original draft.

Ravi P. Rajkumar: Writing—original draft; writing—review and editing.

CONFLICT OF INTEREST STATEMENT

S. M. Yasir Arafat is an Editorial Board member of Health Science Reports and a co-author of this article. To minimize bias, they were excluded from all editorial decision-making related to the acceptance of this article for publication. The remaining author declares no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study will be provided on request.

TRANSPARENCY STATEMENT

The lead author S. M. Yasir Arafat affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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