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RESEARCH ARTICLE

Prevalence and associated factors of postpartum depression among Afghan women: A phase-wise cross-sectional study in Rezaie maternal hospital in Herat province

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ABSTRACT

Background: Postpartum depression (PPD) is a common mood disorder affecting about 10–15% of adult mothers annually. This study aimed to find the prevalence and associated factors of postpartum depression among women in Herat province in Afghanistan.

Methods: Across-sectional study was conducted between 11 July 2021 and 15 September 15, 2021, among women who delivered a baby at Rezaie Maternal Hospital of Herat province (Afghanistan). A total of 242 women participated in the first phase of this study with a mean age of 25.40 ± 5.510. To assess the depression among participants, the Edinburg Postnatal Depression Scale was used.

Results: Almost half the participants reported that it was their first labour (45.0%). In the first phase, nearly half of the participants were found to have depression (45.5%). In the second phase of this study, less than one in three participants had depression (30.7%). More than one in five participants changed from depression to normal (21.5%). Almost half of the participants remained the same in both phases of this study (47.8%).

Conclusion: It is crucial to examine women's psychological health during the postnatal period to understand how we may assist women through targeted interventions based on their particular needs. Our study shows that the post-partum depression among women in Herat province of Afghanistan, decreases and factors such as educational level, number of family members, happening of bad event during the past month, and presence of physical illness have a direct impact on postpartum depression.

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Introduction

Postpartum depression (PPD) is a common mood disorder affecting about 10–15% of adult mothers annually (1).

PPD is described as the perinatal form of major depressive disorder (MDD), which affects approximately 500,000 women annually in the US. PPD is a common complication of childbirth and is related to many adverse outcomes for both mothers and babies, including maternal mortality and morbidity, increased risk of infanticide, poor maternal-infant attachment, and bad parenting behaviours (2).

Depression is a common and severe mood disorder. Those who suffer from depression experience persistent feelings of despair and hopelessness and lose interest in activities that they once enjoyed. Individuals who suffer from depression can present with physical symptoms such as chronic pain or digestive problems. According to the DSM-5 criteria, to be diagnosed with depression, signs and symptoms must be present for more than two weeks (3).

Depression diagnosis requires five or more symptoms; one should be depressed mood or anhedonia, which is the most crucial criterion (4). Other common signs and symptoms of depression include persistent feelings of sadness and hopelessness, irritability and frustration, anxiety, trouble with concentration and other cognitive functions, feelings of guilt and worthlessness, and suicidal thoughts and ideas (5).

Early interactions between infants and their caregivers are fundamental to child development. The parent-infant relationship is believed to provide the foundation for healthy and secure attachment relationships and infant mental health. Over time, these secure attachment relationships become the backbone of positive child outcomes throughout development (6).

Maternal, prenatal, and postnatal psychological distress, such as anxiety and depression, can negatively affect mother-infant interactions. However, more information is needed on the role of specific types and timings of pre-and postnatal distress symptoms in the mother-infant interaction (7). The prevalence of postpartum depression (PPD) is 17%, and the incidence is 12% worldwide (8). Another study shows that PPD occurs in 13-19% of women in European countries (9).

There is a paucity of literature on the mental health of women postpartum, especially depression, in Afghanistan. This study aimed to find the prevalence and related factors of postpartum depression among women in Herat province in Afghanistan.

Materials and Methods

This cross-sectional study was conducted between 11 July 2021 and 15 September 15, 2021, among women who delivered a baby at Rezaie Maternal Hospital of Herat province (Afghanistan), a governmental specialty hospital in this province. A questionnaire was distributed to women who visited Rezaie Maternal Hospital and agreed to participate in the study. The study participants were selected using the convenience sampling method. Women who visited Rezaie Maternal Hospital for their childbirth were asked to participate in this study; those who agreed with the terms and conditions of participation were selected, knowing they could choose not to continue at any time during the progress. Women who agreed to provide an informed consent letter and were over 15 years of age were included in this study. In the first phase of the study, participants were interviewed in-person. In the second phase, that happened after two months of the first phase they were called via their phone number. A total of 242 women participated in this study in the first phase of the study, and 205 of them participated in the second phase.

The questionnaire used in this study consisted of the sociodemographic section and the depression screening section.

Sociodemographic information included questions on age, residency (urban, rural), education (illiterate, primary school, secondary school, high school, university), husband's education (illiterate, primary school, secondary school, high school, university), economic status (high income, low

income), occupation (employed, not-employed), husband's occupation (employed, not-employed), presence of disease (yes, no), a mentally affecting event occurred during the last two weeks (yes, no), gender of the born child (boy, girl), first child (yes, no) and family members count (2-5, 6-10, more than 10).

The depression section included the Dari-language translated version of the Edinburgh postpartum depression 10-item scale. It included questions on three subcategories including anxiety (e.g., 'I have blamed myself unnecessarily when things went wrong'), depression (e.g., "I have been so unhappy that I have had difficulty sleeping') and anhedonia (e.g., "I have been able to laugh and see the funny side of things'). They included 10 results with a score of 0 to 30.22 A cutoff score of 0 to 9 is considered normal. A cut-off score of 10 to 12 indicates the presence of symptoms of distress that might be discomforting. A cutoff score of 13 or above is considered as the presence of depression.

A pilot study was conducted to check the understandability of the questionnaire. The participants understood the questionnaire, and only minor spelling problems were corrected for the final version of the questionnaire.

IBM SPSS version 26 was used for data entry and data analysis. The frequency option was used to obtain the numbers and percentages of sociodemographic variables and depression. To evaluate the relationship between different variables, chi-square tests were used. A p-value of less than 0.05 was considered significant in the present study.

Ethical approval for this study was obtained from the Ethics Committee of the Afghanistan Center for Epidemiological Studies (reference number #21.008; July 1, 2020). During the initial contact with the participants, the whole procedure and the study objective were demonstrated to the participants. All methods were carried out in accordance with relevant ethical guidelines and regulations.

Results

A total of 242 women participated in the present study, with a mean age of 25.40 ± 5.510. More than half of the participants were aged 16 to 25 years (55.4%). More than a third of the participants were illiterate (37.2%). Only one-tenth of the participants had high incomes (10.7%). **(Table 1)**

Table 1: Characteristics of the participants

Characteristic	Category	N (%)
Age group	16-25 years	134 (55.4)
	≥26 years	108 (44.6)
Residency	Urban	143 (59.1)
	Rural	99 (40.9)
Education	Illiterate	90 (37.2)
	Primary school	45 (18.6)
	Secondary school	32 (13.2)
	high school	42 (17.4)
	University	33 (13.6)
Husband's Education	Illiterate	83 (34.3)
	Primary school	29 (12.0)
	Secondary school	38 (15.7)
	high school	50 (20.7)
	University	42 (17.4)
Economic status	High income	26 (10.7)
	Low income	216 (89.3)
Occupation	Employed	27 (11.2)
	Not-employed	215 (88.8)
Husband's Occupation	Employed	172 (71.1)
	Not-employed	70 (28.9)
Feeling sick	Yes	63 (26.0)
	No	179 (74.0)
Mentally affecting event	Yes	127 (52.5)
	No	115 (47.5)
Child Gender	Boy	114 (47.1)
	Girl	128 (52.9)
First Child	Yes	109 (45.0)
	No	133 (55.0)
Family members	2 – 5	89 (36.8)
	6 –10	112 (46.3)
	> 10	41 (16.9)
Total		**242 (100.0)**

Almost half the participants reported that it was their first labour (45.0%). In the first phase, nearly half of the participants were found to have depression (45.5%). In the second phase of this study, less than one in three participants had depression (30.7%). **(Table 2)**

Table 2: Characteristics of the participants and their relationship with the prevalence of depression in two stages

Characteristic	Category	N1 (%)	DP1 (%)	P1	N2 (%)	DP2 (%)	P2
Age group	16-25 years	81 (60.4)	53 (39.6)	**.040**	76 (69.7)	33 (30.3)	.880
	≥26 years	51 (47.2)	57 (52.8)		66 (68.8)	30 (31.3)	
Residency	Urban	81 (56.6)	62 (43.4)	.431	88 (70.4)	37 (29.6)	.661
	Rural	51 (51.5)	48 (48.5)		54 (67.5)	26 (32.5)	
Education	Illiterate	44 (48.9)	46 (51.1)	.369	50 (70.4)	21 (29.6)	.056
	Primary school	24 (53.3)	21 (46.7)		22 (55.0)	18 (45.0)	
	Secondary school	18 (56.3)	14 (43.8)		16 (61.5)	10 (38.5)	
	high school	23 (54.8)	19 (45.2)		28 (73.7)	10 (26.3)	
	University	23 (69.7)	10 (30.3)		26 (86.7)	4 (13.3)	
Husband's Education	Illiterate	46 (55.4)	37 (44.6)	.663	46 (67.6)	22 (32.4)	.236
	Primary school	13 (44.8)	16 (55.2)		14 (58.3)	10 (41.7)	
	Secondary school	24 (63.2)	14 (36.8)		20 (62.5)	12 (37.5)	
	high school	26 (52.0)	24 (48.0)		32 (71.1)	13 (28.9)	
	University	23 (54.8)	19 (45.2)		30 (83.3)	6 (16.7)	
Economic status	High income	11 (42.3)	15 (57.7)	.185	12 (60.0)	8 (40.0)	.344
	Low income	121 (56.0)	95 (44.0)		130 (70.3)	55 (29.7)	
Occupation	Employed	116 (54.0)	99 (46.0)	.602	122 (67.4)	59 (32.6)	.112
	Not-employed	16 (59.3)	11 (40.7)		20 (83.3)	4 (16.7)	
Husband's Occupation	Employed	45 (67.2)	22 (32.8)	.052	47 (79.7)	12 (20.3)	**.040**
	Not-employed	87 (49.7)	88 (50.3)		95 (65.1)	51 (34.9)	
Presence of disease/illness	Yes	18 (28.6)	45 (71.4)	**<.001**	30 (54.5)	25 (45.5)	**.006**
	No	114 (63.7)	65 (36.3)		112 (74.7)	38 (25.3)	
Mentally affecting event	Yes, No	43 (33.9)	84 (66.1)	**<.001**	68 (64.8)	37 (35.2)	.152
		89 (77.4)	26 (22.6)		74 (74.0)	26 (26.0)	
Child Gender	Boy	59 (51.8)	55 (48.2)	.411	64 (68.8)	29 (31.2)	.898
	Girl	73 (57.0)	55 (43.0)		78 (69.6)	34 (30.4)	
First Child	Yes	62 (56.9)	47 (43.1)	.509	66 (71.0)	27 (29.0)	.631
	No	70 (52.6)	63 (47.4)		76 (67.9)	36 (32.1)	
Family members	2 – 5	51 (57.3)	38 (42.7)	**.015**	62 (81.6)	14 (18.4)	**.004**
	6 –10	67 (59.8)	45 (40.2)		54 (58.1)	39 (41.9)	
	> 10	14 (34.1)	27 (65.9)		26 (72.2)	10 (27.8)	
Total		**132 (54.5)**	**110 (45.5)**		**142 (69.3)**	**63 (30.7)**	

*Statistically significant; DP1: Depression status phase one; DP2: Depression status phase two; N/A: Not applicable

When comparing the first and second phases of the depression screening results, more than one in five participants changed from depression to normal (21.5%). Almost half of the participants remained the same (no changes in the depression stages happened in the first and second round of our assessment) in both phases of this study (47.8%). Nearly one in four participants who were depressed in the first phase had been in the same state in the second phase of this study (23.9%). Very few participants who were normal in the first phase were found to be depressed in the second phase of this study (6.8%). **(Table 3)**

Table 3: Characteristics of the participants and their relationship with depression status change

Characteristic	Category	D – N	N – N	D – D	N – D	p-value
Education	Illiterate	18 (25.5)	32 (45.1)	17 (23.9)	4 (5.6)	**.003***
	Primary school	4 (10.0)	18 (45.0)	16 (40.0)	2 (5.0)	
	Secondary school	4 (15.4)	12 (46.2)	8 (30.8)	2 (7.7)	
	high school	14 (36.8)	14 (36.8)	4 (10.5)	6 (15.8)	
	University	4 (13.3)	22 (73.3)	4 (13.3)	0 (0.0)	
Presence of disease/illness	Yes	20 (36.4)	10 (18.2)	19 (34.5)	6 (10.9)	**.000***
	No	24 (16.0)	88 (58.7)	30 (20.0)	8 (5.3)	

Table 3 *(continued)*

Characteristic	Category	D – N	N – N	D – D	N – D	p-value
Mentally affecting event	Yes	34 (32.4)	34 (32.4)	35 (33.3)	2 (1.9)	**.000***
	No	10 (10.0)	64 (64.0)	14 (14.0)	12 (12.0)	
Family members	2 – 5	22 (28.9)	40 (52.6)	10 (13.2)	4 (5.3)	**.000***
	6 –10	8 (8.6)	46 (49.5)	29 (31.2)	10 (10.8)	
	> 10	14 (38.9)	12 (33.3)	10 (27.8)	0 (0.0)	
Total		**44 (21.5)**	**98 (47.8)**	**49 (23.9)**	**14 (6.8)**	

D – N: Depression to Normal; N – N: Normal to Normal; D – D: Depression to Depression; N – D: Normal to Depression;

The mean anxiety score among participants with primary school educational level was (4.29 ± 3.84, p-value: 0.247). The mean score of the depression section among participants with secondary school educational level was (4.16 ± 3.60, p-value: 0.261. **(Table 4)**

Table 4: Three factors of the EPD scale of depressed female adults in the subgroups by sociodemographic characteristics

Variable	Categories	Anxiety	PY	Depression	PN	Anhedonia	PA
Education	Illiterate	3.39 ± 3.08	.247	3.60 ± 3.10	.291	2.52 ± 2.10	.261
	Primary school	4.29 ± 3.84		2.78 ± 3.23		2.09 ± 2.30	
	Secondary school	3.06 ± 2.78		4.16 ± 3.60		1.87 ± 1.77	
	high school	3.17 ± 2.72		2.95 ± 2.63		2.81 ± 1.93	
	University	2.82 ± 2.78		3.06 ± 3.52		2.45 ± 1.72	
Presence of disease/illness	Yes	5.27 ± 3.29	**<.001***	5.13 ± 3.16	**<.001***	3.67 ± 1.85	**<.001***
	No	2.74 ± 2.77		2.70 ± 2.96		1.95 ± 1.90	
Mentally affected event	Yes	4.33 ± 3.21	**<.001***	4.67 ± 3.18	**<.001***	3.45 ± 1.83	**<.001***
	No	2.37 ± 2.66		1.86 ± 2.47		1.24 ± 1.55	
Family members	2 – 5	2.89 ± 2.61	.100	3.27 ± 3.43	.187	2.35 ± 1.87	.714
	6 –10	3.55 ± 3.61		3.09 ± 3.16		2.35 ± 2.18	
	> 10	4.07 ± 2.46		4.15 ± 2.60		2.63 ± 1.95	

*Statistically significant; PY: p-value for anxiety; PN: p-value for Depression; PA: p-value for Anhedonia;

Discussion

In this study, the prevalence of postpartum depression and the change in depression status over the two-month gap of 2 months among the women delivered in a health facility in Herat province of Afghanistan. In this study, we tried to provide a more extensive evaluation of the psychological effects of becoming a parent, considering that a woman's psychological status during the postpartum period might change over time.

The study finding revealed that about half of the participants (45.5%) experienced depression during their postpartum period, which is higher than the prevalence of depression in South Asia (11).

The prevalence of depression was reduced (30.7%) in the study's second phase, which contradicts a survey conducted during the COVID-19 period, which denoted that the prevalence of depression was increased by more than 10 points (12).

The study findings also indicated that the presence of disease or disease and the influence of family members in both time periods are significantly associated with the prevalence of PPD, which is consistent with several studies that they have shown that support from a spouse, family, friends, has positive significant association and complications during pregnancy, and the presence of chronic diseases such as HIV has negative significant association with the prevalence of PPD (13,14). The study also revealed a strong correlation between the development of depression, anxiety, and anhedonia and the existence of any disease, including those that have a psychological impact on the mother. This is consistent with a study conducted in Italy that reported that perinatal mental illness positively correlates with the onset of postpartum depression (15).

The current study also showed that educational status and other factors that

psychologically affected factors were also responsible for postpartum depression, in contrast to a similar study conducted in Japan which found that mothers with low educational levels were one of the risk factors for the development of PPD in women (16).

Despite many governments' efforts to promote gender equality, the traditional "son preference" belief and accompanying behavior continue to be prevalent throughout South East Asia, at least in some areas (17,18). The preference to have a boy child over a girl child is influenced by the fact that boys are regarded as decedents in society, whereas girls are not (23). Many studies have claimed that having a girl child is one of the risk factors for PPD (18), but the current study found no conclusive link between the gender of the child and the prevalence of PPD among Afghan women.

Several studies have reported that primiparous mothers are more prone to develop PPD. A systematic review and meta-analysis conducted in India reported that the prevalence of PPD among primiparous mothers is 22% (19,20), and postpartum depression and blues are more common in primiparous mothers than in multiparous women, according to a comparable study conducted in Japan (21).

The current study, like other studies, has significant limitations. For example, mothers' well-being was self-report questionnaires susceptible to social desirability bias. To better understand the subjective experience of the transition to parenting, future studies could explore women's psychological health by adopting qualitative designs by conducting in-depth interviews. Finally, although this study was not originally intended to focus on parenting experiences during the pandemic, this unexpected event undoubtedly impacted our research, which required the inclusion of some questions related to COVID-19.

Despite these drawbacks, this study can produce valuable data for the development of specialized postpartum support interventions. Although the government provides a wide range of maternal and child health (MCH) services, it may be advantageous to administer some beneficial programs in their first postpartum year (such as educational programs).

Conclusion

It is crucial to examine women's psychological health during the postnatal period to understand how we may assist women through targeted interventions based on their particular needs. Our study shows that the post-partum depression among women in Herat province of Afghanistan, decreases and factors such as educational level, number of family members, happening of bad event during the past month, and presence of physical illness have a direct impact on postpartum depression.

Authors' contribution

All authors made substantial contribution to conception and design, data analysis and their interpretation, drafting the article and giving the finale approval of the version to be published, and agreed to be accountable for all aspects of work.

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