

Assessment of Depression and Anxiety Levels among Postpartum Women in Najran City

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Abstract

Background: The postpartum period represents a critical and delicate phase in most pregnancies. Postpartum mental health refers to the mental and emotional well-being of mothers after giving birth. This study aimed to assess depression and anxiety levels among postpartum women in Najran city.

Methods: The study employed an observational design conducted from 1st May to 30th September 2022 in primary healthcare facilities in Najran, Saudi Arabia. A sample of 241 postpartum women participated in the study. Socio-demographic characteristics, obstetric history, and the Depression, Anxiety, and Stress Scale (DASS-21) were used to collect the data.

Results: The study findings revealed that 35.7% of the subjects exhibited a moderate level of depression, whereas about 50% had severe to extremely severe levels of depression.

Furthermore, 30.7% of the participants displayed a moderate level of anxiety, while 19.5% exhibited a mild level of anxiety. Regarding stress levels, 31.1% of the subjects experienced a moderate stress level, whereas 18.7% reported an extremely severe level of stress.

Conclusion: The findings indicate that almost half of the participants (nearly 50%) had severe to extremely severe depression, anxiety, and stress. These results underscore the importance of prioritizing mental health care for postpartum women and implementing effective strategies to address depression, anxiety, and stress, thereby ensuring their overall well-being and that of their families.

Keywords

Postpartum, Depression, Anxiety, Stress, Mental health, Najran

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Introduction:

Childbirth is a difficult and exhausting process. During pregnancy, women undergo significant hormonal, physical, emotional, and psychological transformations. These changes also impact their families and social relationships. After giving birth, mothers may experience various emotions, from joy and satisfaction to sadness and frequent crying. This emotional state, known as "baby blues", typically diminishes within the first two weeks postpartum. ⁽¹⁾

The term "postpartum women" refers to those who have recently given birth and are in the period immediately following childbirth. This phase, known as the postpartum period, typically lasts around six weeks but can extend to several months depending on individual circumstances. ⁽²⁾ It is a critical time during which women experience physical, emotional, and psychological changes as they recover from childbirth and adapt to their new roles as mothers. ⁽³⁾

Depression and anxiety are two prevalent mental health disorders that can significantly affect postpartum women's well-being. The postpartum period, characterized by hormonal changes, sleep disturbances, and adjustment to new roles and responsibilities, can exacerbate the risk of developing these conditions. ⁽⁴⁾ Research has consistently shown that postpartum depression (PPD) and anxiety not

only impact the mother's mental health but also have far-reaching consequences for the infant's development and the overall family dynamics. ⁽⁵⁾

Postpartum women experiencing depression are often associated with physical and relationship problems. Women with PPD are less likely to attend routine postpartum consultations or to vaccinate their children on time. Infants born to women with depression may be unsettled and are prone to experiencing delayed language development and behavioral issues by the age of three. ⁽⁶⁾

PPD is the most common psychological health problem among women, affecting 10%–15% worldwide. ⁽⁷⁾ Regarding maternal postpartum anxiety, the prevalence rate ranged from 9% to 13% worldwide. ⁽⁸⁾ The consequences of PPD for both mother and infant are well established: women who suffer from PPD are twice as likely to experience future episodes of depression over 5 years. PPD can weaken the bond and communication between mother and infant, potentially leading to attachment issues, developmental delays, and problems with social interaction and cohesion in affected children. In Western countries, the prevalence of PPD varies from 10 to 15% during the first year after birth. ⁽⁹⁾

The consequences of untreated PPD and anxiety can be detrimental to both the mother

and her child. Maternal depression has been associated with impaired bonding, reduced breastfeeding rates, and inadequate maternal-infant interaction.⁽¹⁰⁾ Additionally, children of mothers with PPD are at higher risk of developmental delays, emotional and behavioral problems, and poor long-term outcomes. The impact of postpartum anxiety on the mother-infant relationship and child development is equally concerning, as anxiety can lead to excessive worry, difficulty in caregiving, and increased stress levels.⁽¹¹⁾

Understanding the factors associated with PPD and anxiety is crucial for early identification and intervention. Previous research has identified various risk factors, including a history of mental health disorders, lack of social support, stressful life events, and

socioeconomic disparities.⁽¹²⁾ Additionally, the role of biological factors such as hormonal fluctuations and genetic predisposition has also been investigated.⁽¹³⁾ Efforts to address PPD and anxiety have focused on a multidimensional approach. Interventions range from individual therapy and support groups to pharmacological treatments, depending on the severity of symptoms. Prevention and early intervention programs have also been implemented to screen and provide support to at-risk women. Collaborative efforts between healthcare providers, mental health professionals, and community support networks are crucial in identifying and addressing the mental health needs of postpartum women effectively.⁽¹⁴⁾

Materials and Methods

Study Design, Area and Population

The design of this study was a descriptive cross-sectional, conducted from the 1st of May to the 30th of September 2022 to assess the depression and anxiety levels among postpartum women in primary healthcare facilities in Najran City, Saudi Arabia. The study subjects were postpartum women who met the criteria of their age being between 18 and 50 years and who attended primary healthcare facilities for postpartum care or neonatal immunization. Women who had a

pre-existing psychiatric disorder before delivery were excluded from the study.

Sample size and sampling technique:

The study targeted a sample of 360 postpartum women who attended the targeted health facilities during the study period and met the inclusion criteria. Invitations to participate were extended to them through WhatsApp, assisted by nurses working in the targeted health facilities, who provided the participants' contact details.

Data Collection Tools:

The data was collected through a structured electronic questionnaire. The researcher developed the first two parts of the questionnaire, the socio-demographic characteristics and the obstetric history, after thoroughly reviewing the relevant literature and adopting the Depression, Anxiety, and Stress Scale (DASS-21).⁽¹⁵⁾ The socio-demographic characteristics of all study participants included variables such as age, weight, height, employment status, level of education, income level, and place of residence. The obstetric history encompassed various factors such as the number of children, the sex of the baby, the age of the last baby, the type of current delivery, details of previous deliveries, the number of deliveries, the number of pregnancies, and the history of abortion.

The DASS-21 is a short version (21 item) of a 42-item self-administered questionnaire designed to assess negative emotional states: depression, anxiety, and stress in individuals. Adapted from the original DASS scale by Lovibond and Lovibond⁽¹⁵⁾, it consists of 21 items, with seven items dedicated to each of the three domains: depression (3, 5, 10, 13, 16, 17, & 21), anxiety (2, 4, 7, 9, 15, 19, & 20), and stress (1, 6, 8, 11, 12, 14, & 18).

The DASS-21 utilizes a scoring system to quantify the severity of depression, anxiety, and stress symptoms reported by individuals. The scoring is based on the responses given to

the 21 items in the questionnaire, participants are asked to rate the extent to which they have experienced each symptom over the past week on a four-point Likert scale ranging from 0 (didn't apply to me at all) to 3 (applied to me very much or most of the time). For each of the three domains (depression, anxiety, and stress), the scores are calculated by summing the responses to the corresponding items. The maximum score for each domain is multiplied by 2 to calculate the final score. As seen in Table 1.

Tools validity and reliability:

A panel of 5 nursing experts validated the tool. They evaluated the relevance, clarity, comprehensiveness, and questions' applicability. Reliability was assessed using the Cronbach's Alpha coefficient test, yielding a score of 0.80 to 0.91 for the Depression, Anxiety, and Stress Scale (DASS-21).

Ethical Considerations

The institutional review board of the Najran Scientific Research Ethics Committee

approved the protocol. Participation in this study was voluntary. It complies with the Declaration of Helsinki. No written consent was sought, as there were no personal identifiers on the questionnaires, and this was approved by the ethical committee.

The researcher ensured that participation in the questionnaire was entirely voluntary, with no coercion or incentives involved. The

questionnaire was completed anonymously and the data were kept confidential and used solely for research purposes.

Statistical Analysis

Data was organized, classified, and presented in tables. The Statistical Package for the Social Sciences (SPSS Inc; version 27; IBM Corp.,

Armonk, NY, USA) was used for data analysis. Descriptive statistics were applied to summarize participants' demographic details. Frequencies and percentages were used to display categorical variables, while means and standard deviations were applied for continuous variables.

Table (1) The Scoring system of Total DASS-21

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely severe	28+	20+	34+

Results:

Two hundred and forty-one women agreed to participate, resulting in a response rate of 66.9%. Of them, 51% fell within the age range of 19-30 years. Moreover, 40.2% of the subjects were classified as having an optimum range of weight. Regarding educational level, it was found that 58.1% of the participants had obtained a university education, while 46.1% identified themselves as housewives. When considering income level, the majority of the participants (65.6%) reported having sufficient family income. Additionally, 79.3% of the subjects resided in urban areas. Table (2) displays additional details.

As shown in Table (3) about the obstetric history, the data reveals that 56.4% of the postpartum women had given birth to 2-4 children, while 55.2% had encountered 2-4 pregnancies, and 47.7% of the women had undergone 1-2 deliveries, out of which 72.6% experienced a normal delivery. Concerning the gender distribution of the newborns, 50.6% were males, and the majority (88%) were under one year of age. Furthermore, the study discovered that 72.2% of the women had no prior history of abortion.

Table 2: Socio-demographic Characteristics of Postpartum Women (n=241)

Items		F	%
Age	19 to 30 years	125	51.9%
	31 to 40 years	79	32.8%
	41 to 50 years	37	15.3%
Body Mass Index	Underweight	2	0.8%
	Weight loss	11	4.6%
	Optimum range	97	40.2%
	Overweight	63	26.1%
	Mild obesity	44	18.3%
	Medium obesity	19	7.9%
Educational level	Excessive obesity	5	2.1%
	Primary	18	7.5%
	secondary	72	29.9%
	University	140	58.1%
	Postgraduate	11	4.6%
Job	Student	49	20.3%
	Housewife	111	46.1%
	Work in the health sector	38	15.8%
	Work in the non-health sector	43	17.8%
Income level	Not enough	67	27.8%
	Enough	158	65.6%
	Enough and more	16	6.6%
Residence	Urban	191	79.3%
	Rural	50	20.7%

Table 3: Distribution of Study Participants Based on Obstetric History (n=241).

Items			F	%
Number of children you have	0-1		62	25.7%
	2-4		136	56.4%
	5-6		35	14.5%
	>7		8	3.3%
Number of pregnancies	1		55	22.5%
	2-4		133	55.2%
	5-6		41	17%
Number of deliveries	>7		12	5%
	1-2		115	47.7%
	3-5		103	42.7%
Type of the current delivery	>6		23	9.5%
	Normal		175	72.6%
Type of previous deliveries	Cesarean		66	27.4%
	Normal		170	70.5%
Sex of the baby	Cesarean		71	29.5%
	Male		122	50.6%
The age of the last child	Female		119	49.4%
	<1		212	88%
	1-<2		9	3.7%
	2-3		17	7.1%
History of abortion	>3		3	1.2%
	Yes		67	27.8%
	No		174	72.2%

Table (4): Distribution of the Studied Subjects according to their Depression, Anxiety, and Stress levels (n=241).

Items	Mean	Std. Deviation	%
1) I found it hard to wind down	2.27	1.05	56.74%
2) I was aware of the dryness of my mouth	2.22	1.01	55.39%
3) I couldn't seem to experience any positive feelings at all	2.16	1.09	53.94%
4) I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	2.23	1.09	55.71%
5) I found it difficult to work up the initiative to do things	2.28	1.08	57.05%
6) I tended to over-react to situations	2.24	1.06	55.91%
7) I experienced trembling (eg, in my hands)	2.03	1.03	50.73%
8) I felt that I was using a lot of nervous energy	2.34	1.11	58.51%
9) I was worried about situations in which I might panic and make a fool of myself	2.20	1.12	55.08%
10) I felt that I had nothing to look forward to	2.15	1.07	53.84%
11) I found myself getting agitated	2.15	1.08	53.73%
12) I found it difficult to relax	2.29	1.11	57.37%
13) I felt down-hearted and blue	2.20	1.11	55.08%
14) I was intolerant of anything that kept me from getting on with what I was doing	2.24	1.13	55.91%
15) I felt I was close to panic	2.12	1.09	53.01%
16) I was unable to become enthusiastic about anything	2.17	1.11	54.25%
17) I felt I wasn't worth much as a person	2.10	1.11	52.49%
18) I felt that I was rather touchy	2.43	1.12	60.68%
19) I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	2.24	1.16	56.12%
20) I felt scared without any good reason	2.22	1.11	55.50%
21) I felt that life was meaningless	2.11	1.14	52.70%

Table 4 reveals that 56.74% of the subjects studied reported difficulty in unwinding and finding relaxation. Furthermore, 55.08% of the women expressed worry about situations in which they might experience panic and embarrassment. In addition, 53.84% of the participants felt a lack of anticipation for the future, while 53.73% experienced increased agitation. Interestingly, 60.68% of the studied women described themselves as being rather touchy. Moreover, 52.70% of the participants reported feeling that life was meaningless.

According to the findings presented in Figure 1, it was observed that 35.7% of the studied postpartum women exhibited a moderate level of depression, whereas about 50% had severe to extremely severe levels of depression.

Based on the results depicted in Figure 2, it was found that more than a quarter (28.6%) of the studied postpartum women displayed severe levels of anxiety, and almost one-fifth (21.2%) complained of an extremely severe level of anxiety.

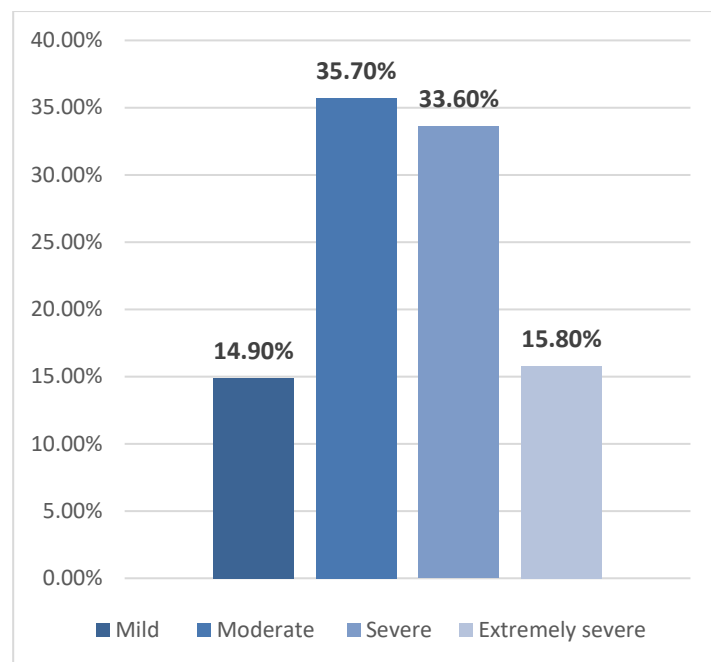


Figure (1): Total depression levels among post-partum women (n=241).

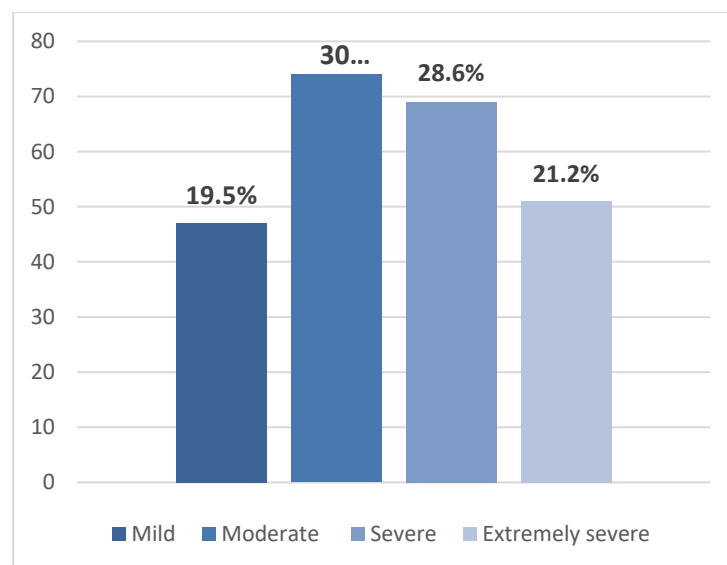


Figure (2): Total anxiety levels among post-partum women (n=241).

According to the data presented in Figure (3), it was found that 31.1% of the studied postpartum women experienced a moderate level of stress, while 18.7% reported an extremely severe level of stress.

Tables (5), (6) and (7) illustrate that there is a highly statistically significant relation between total anxiety level, total depression level and the total level of stress among the studied sample and their age, body weight, educational level, job, and income level. Also, there was a statistically significant relation between total stress levels among the studied sample and their residence, while there is no statistically significant relation between total anxiety level and their residence.

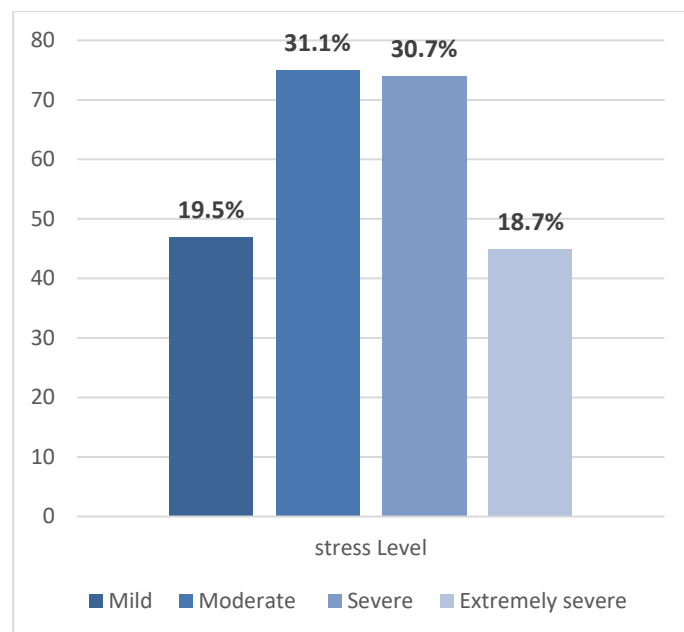


Figure (3): Total stress levels among post-partum women (n=241).

Table (5) The relationship between postpartum women's socio-demographic characteristics and total depression level (n=241)

Socio-demographic characteristics	No	Mild depression	Moderate depression	Severe depression	Extreme severe depression	X ²	P-Value
Age (years)						57.149	.000**
- 19 to 30 years	125	19	50	45	11		
- 31 to 40 years	79	12	11	32	24		
- 41 to 50 years	37	5	25	4	3		
Body weight						154.51	.000**
- Very severe deficiency	1	1	0	0	0		
- Acute shortage	1	1	0	0	0		
- Weight loss	11	8	3	0	0		
- normal weight	97	6	47	38	6		
- Increase in weight	63	13	0	21	29		
- Mild obesity	44	2	25	17	0		
- Medium obesity	19	5	11	0	3		
- Excessive obesity	5	0	0	5	0		
Educational level						84.985	.000**
- Primary	18	10	8	0	0		
- Secondary	72	2	42	28	0		
- University	140	19	34	49	38		
- Post graduate	11	5	2	4	0		
Job						147.57	.000**
- Student	49	11	38	0	0		
- Housewife	111	3	12	41	6		
- Work in the health sector	38	17	5	36	29		
- Work in the unhealthy sector	43	5	31	4	3		
Income level						79.117	.000**
- Not enough	67	12	50	5	0		
- Enough	158	19	32	72	35		
- Enough & more	16	5	4	4	3		
Residence						43.270	.000**
- Urban	191	15	81	63	32		
- Rural	50	21	5	18	6		

(**) highly statistically significant at $p < 0.01$.

Table (6) The relationship between postpartum women's socio-demographic characteristics and total anxiety level (n=241)

Socio-demographic characteristics	No	Mild depression	Moderate depression	Severe depression	Extreme severe depression	X ²	P-Value
Age (years)						366.09	.000**
- 19 to 30 years	125	48	73	4	0		
- 31 to 40 years	79	0	0	65	14		
- 41 to 50 years	37	0	0	0	37		
Body weight						407.566	.000**
- Very severe deficiency	1	1	0	0	0		
- Acute shortage	1	1	0	0	0		
- Weight loss	11	11	0	0	0		
- normal weight	97	35	62	0	0		
- Increase in weight	63	0	5	58	0		
- Mild obesity	44	0	5	11	28		
- Medium obesity	19	0	0	0	19		
- Excessive obesity	5	0	1	0	4		
Educational level						240.445	.000**
- Primary	18	18	0	0	0		
- secondary	72	30	42	0	0		
- University	140	0	31	69	40		
- Post graduate	11	0	0	0	11		
Job						601.439	.000**
- Student	49	48	1	0	0		
- Housewife	111	0	62	0	0		
- Work in the health sector	38	0	10	69	8		
- Work in the unhealthy sector	43	0	0	0	43		
Income level						227.866	.000**
- Not enough	67	48	19	0	0		
- Enough	158	0	54	69	35		
- Enough and more	16	0	0	0	16		
Residence						7.378	.061
- Urban	191	38	53	62	38		
- Rural	50	10	20	7	13		

(**) highly statistically significant at $p < 0.01$.

Table (7) The relationship between postpartum women's socio-demographic characteristics and total stress level (n=241)

Socio-demographic characteristics	No	Mild depression	Moderate depression	Severe depression	Extreme severe depression	X ²	P-Value
Age (years)						404.75	.000**
- 19 to 30 years	125	47	75	3	0		
- 31 to 40 years	79	0	0	71	8		
- 41 to 50 years	37	0	0	0	37		
Body weight						389.70	.000**
- Very severe deficiency	1	1	0	0	0		
- Acute shortage	1	1	0	0	0		
- Weight loss	11	11	0	0	0		
- normal weight	97	34	63	0	0		
- Increase in weight	63	0	6	57	0		
- Mild obesity	44	0	5	17	22		
- Medium obesity	19	0	0	0	19		
- Excessive obesity	5	0	1	0	4		
Educational level						247.73	.000**
- Primary	18	18	0	0	0		
- secondary	72	29	43	0	0		
- University	140	0	32	74	34		
- Post graduate	11	0	0	0	11		
Job						629.64	.000**
- Student	49	47	2	0	0		
- Housewife	111	0	62	0	0		
- Work in the health sector	38	0	11	74	2		
- Work in the unhealthy sector	43	0	0	0	43		
Income level						235.83	.000**
- Not enough	67	47	20	0	0		
- Enough	158	0	55	74	29		
- Enough and more	16	0	0	0	16		
Residence						9.155	.027*
- Urban	191	37	55	67	32		
- Rural	50	10	20	7	13		

(*) Statistically significant at $p < 0.05$. (**) highly statistically significant at $p < 0.01$.

Discussion:

The postpartum period is a critical phase in a woman's life, often associated with various physical, emotional, and psychological changes. Among these changes, the prevalence of depression and anxiety among postpartum women has gained significant attention in recent years. Understanding the levels of depression and anxiety experienced by this population is crucial for developing effective interventions and support systems. ⁽¹⁶⁾ This study aims to examine the levels of depression and anxiety among postpartum women, as well as explore the potential underlying factors that predispose to these mental health factors. By shedding light on the prevalence and severity of these conditions, this research can contribute to the development of targeted interventions and support mechanisms to promote better mental health outcomes during the postpartum period.

Regarding depression levels among postpartum women, the findings indicate that over one-third experienced moderate depression. Moreover, approximately one-third of the participants reported severe depression, while less than one-fifth exhibited low levels of depressive symptoms. These results highlight the significant prevalence of moderate and severe depression among postpartum women, indicating a need for effective intervention and support strategies to address this mental health issue. The high rates of moderate and severe depression in this population underscore the

importance of screening and early detection to provide timely interventions and promote overall well-being for postpartum women.

These results are supported by the study conducted by Guvenc et al. ⁽¹⁷⁾ who reported that more than one-quarter of the studied subjects suffered from depression level. Mercan and Tari Selcuk stated that the level of depression among women increases in the postpartum period. ⁽¹⁸⁾ Toru et al. ⁽¹⁹⁾ detected that PPD is relatively higher in the first 6 weeks after birth. Achtyes et al. indicate that severe depression in the post-partum involves dysregulation of the immune response and the kynurenine pathway, with a concomitant reduction in serotonin levels. ⁽²⁰⁾ Wassif et al. reported that PPD and/or anxiety affect 32.8% of females in the Qaliubeya governorate. ⁽²¹⁾ Nakano et al. showed that about half of postpartum women suffered from depression. ⁽²²⁾ Around one in ten mothers in Sri Lanka experience symptoms of PPD. ⁽²⁾

Concerning the anxiety and stress levels among postpartum women, our study findings indicate that over one-quarter of participants experienced moderate to severe anxiety. Additionally, approximately one-third of the participants reported moderate to severe levels of stress. These results underscore the significant prevalence of anxiety and stress among postpartum women, highlighting the need for appropriate interventions and support

to address these mental health concerns. These results cohort with the study by Nakić Radoš et al. who stated that postpartum mothers suffered from high stress.⁽²³⁾ Also, Li reported that the mean score of anxiety was 27.66 (9.4) and the stress level mean was 27.83 (9.9).⁽²⁴⁾ Postnatal post-traumatic stress symptoms and disorders have been shown to negatively impact the lives of childbearing women.⁽²⁵⁾ Anxiety disorders are common among postpartum women.⁽²⁶⁾ Nakić Radoš et al. found that the estimated rate of high anxiety was 35% during pregnancy, 17% immediately after childbirth, and 20% six weeks postpartum, showing a decrease in anxiety levels after childbirth.⁽²⁷⁾ Dennis et al. detected that the prevalence of anxiety symptomatology at 1, 4, and 8 weeks postpartum was 22.6%, 17.2%, and 14.8% respectively.⁽²⁸⁾

This study revealed that most of sociodemographic factors such as age, body weight, educational level, job, and income level have a highly statistically significant relation with depression, anxiety, and stress levels among the studied postpartum women. These results are congruent with the results of the study conducted Henrichs et al. ⁽²⁹⁾ and Nasreen et al. ⁽³⁰⁾ reported a significant association between depression and anxiety and socioeconomic factors.⁽³¹⁾ This may be due to our participated post-partum women having a higher proportion of education, which helps

them in providing job opportunities, which leads to an increase in the workload and leads to high levels of depression, anxiety, and stress.

Conclusion:

The study reveals that over one-third of the postpartum women experienced moderate depression, with another third facing severe depression. Additionally, more than a quarter of the participants reported moderate to severe anxiety, highlighting the significant impact on their well-being during the postpartum period. Furthermore, approximately one-third of the participants experienced moderate to severe stress, underscoring the necessity for comprehensive support and interventions that have to address the cultural and other risk factors that influence depression and anxiety symptoms. Implementation of regular follow-up assessments to track the woman's progress over time, based on a Comprehensive training program for assessing depression and anxiety levels among postpartum women, incorporating both theoretical knowledge and practical skills is crucial.

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Conflict of interests

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