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Authors' Affiliation:
[1]Department of Obstetrics and Gynaecology, College of Medicine, University of Hail, Saudi Arabia
[2]Medical Student, College of Medicine, University of Hail, Saudi Arabia

*Corresponding author
Department of Obstetrics and Gynaecology, College of Medicine, University of Hail,
Saudi Arabia
Email: dr.naveeed@yahoo.com/n.ulhaq@uoh.edu.sa

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Perception of postpartum depressive symptoms and associated risk factors. A study in the women of Hail, Saudi Arabia

Naveed Iqbal[1*], **Lamya A Alshammari**[2], **Sarah Al Barrak**[2]

ABSTRACT

Postpartum Depression (PPD) is an episode of mood disorder that occurs within four weeks after delivery. It's a major health problem affecting the mothers after childbirth. *Objectives:* The objectives of this study are to determine the knowledge and perception of PPD in the women of Saudi Arabia and its association with different risk factors. This study was conducted in Hail from December 2022 to February 2023 and sample size was 316. The data was collected on a pre-designed questionnaire, from mothers aged 20-45, with no known psychiatric illness. The questionnaire includes demographics, number of children, mode of delivery, loss of close family member during pregnancy, family support during pregnancy, abusive partner and bad obstetrical history. The symptoms used in the study taken from Edinburgh scoring system. The data was analysed to see the knowledge and perception of postpartum depression and association with different risk factors. *Conclusion:* The study showed strong association of numerous risk factors in the women who experienced different depressive symptoms during their postpartum periods, although they were not diagnosed with any psychiatric illness. It will provide the foundation for health care providers to do early screening in woman high risk for postpartum depression.

Keywords: Postpartum depression, childbirth, knowledge, risk factors

1. INTRODUCTION

Depression is one of the mental states that is usually found to be difficult to believe or sometimes misunderstood by others. Specifically, postpartum depression (PPD) is a condition which is often misdiagnosed by physicians or unrecognized by society and specifically the mothers themselves (Mughal et al., 2022). PPD is common in mothers during the first month of delivery or more (Ceriani-Cernadas, 2020). A disorder of about a week or two is a syndrome called baby blue which differs from the actual PPD in the duration of the psychological state (Al-Nasr et al., 2020).

Postpartum depression can be caused by many reasons including genetic, social, financial, educational, psychological causes and more (Mughal et al., 2022; Talwar, 2021; Payne and Maguire, 2019). PPD affects the mother, child and the surrounding family in many aspects. It affects the mother's well- being and the way she takes care of her newborn (Al-Nasr et al., 2020). A method of screening named as Edinburgh Postnatal Depression Scale (EPDS) is used frequently to assess and detect PPD (Cox et al., 1987).

Globally, PPD frequency ranges from 10% to 20% and sometimes up to 26% (Ceriani-Cernadas, 2020). Regions such as Canada reported a prevalence of 8% of Canadian women with PPD (Lee et al., 2022). Whereas in China a prevalence of 27.37% have been detected in Chinese mothers. Moreover, studies have been conducted in the middle eastern regions with a prevalence of 17.6% in Qatar and a prevalence of 12.8% in Lebanon as well as a prevalence of 49.5% in Egypt specifically those women in Minia (Al-Nasr et al., 2020).

Up till now, studies of PPD knowledge, prevalence, risk factors have been conducted on some regions of KSA such as Riyadh, Jeddah, Qassim, Jazan and Al-Madinah which makes the understanding of the whole picture and how severe or prevalent the condition is very difficult. Therefore, there is a need for further research on this issue in the Kingdom of Saudi Arabia. In Riyadh city, a cross sectional study has been conducted and revealed a high percentage of 38.50% of women who have PPD especially those who experienced a stressful life. This study determined its prevalence and correlated it to possible predictors (Al-Nasr et al., 2020).

On the other hand, in Jeddah city researchers have assessed the prevalence and risk factors of PPD in women and found high percentages of 20.9% of women with PPD (Alsayed et al., 2021). Furthermore, in Qassim region and specifically Buraidah a similar study to that conducted in Jeddah has been carried out but to mothers with childbearing age which showed a prevalence of 13.7% of PPD (Alonazi and Jahan, 2022). To contribute to our knowledge of PPD based on previous studies, the aim of our research was to see the perception of depressive symptoms and the relationship of predictors of postpartum depression with its various components in mothers of Hail, Saudi Arabia. The Edinburg scoring system is used for the screening of PPD (Cox et al., 1987).

In our study we did not used the Edinburg scoring system as this research depend upon the recall by the mothers from the history whether they experienced these depressive symptoms during their postpartum period. We have studied the relationship of different personal as well as the social risk factors with these depressive symptoms. It was expected that by the end of this study there would be a good understanding of the PPD commonness in KSA and awareness about it by the people, especially the mothers and the physicians. The results of our study have shown that keeping in mind the risk factors, early detection of the woman at risk of PPD and preventing its severity and outcomes using the right measures at the right time.

2. MATERIAL AND METHODS

This is cross sectional, descriptive study. The data was collected from Saudi mothers aged between 20 - 45 years of age willing to participate in the study. The duration of the study was three months from December 2022 to February 2023. The purpose of this study is to determine the perception of postpartum depressive symptoms and the relationship of different predictors with its different components in the mothers of Saudi Arabia.

Data collection methods

The data were collected through the predesigned questionnaires after thorough literature search. This questionnaire then converted to google forms and distributed to the women who willing to participate in the study. The research teams have explained the purpose of the study to the females and reassure them about the privacy and confirm their willingness before enrolling them for study. They have filled in the predesigned questionnaire on their own. The questionnaires contained demographics, number of children and mode of delivery, loss of a close family member during pregnancy, family support during pregnancy and violence of husband. The symptoms of postpartum depression taken from Edinburgh scale.

Ethical consideration

Informed consent was taken from each participant before recording her medically relevant information. The questionnaire did not include any sort of personnel information. Our study protocol confirms the 2013 Declaration of Helsinki. This study started only after approval by the ethical committee of the University of Hail, Saudi Arabia.

Data Analysis Procedure

The Statistical Package for Social Sciences (SPSS version 25) will be used to analyze the data. Descriptive Analysis was conducted to see the means and standard deviation for the study variables. Frequency of different depressive symptoms among study participants was calculated. The 95% confidence level and confidence intervals will be employed. The Chi square test was applied

to see the relationship of different risk factors with depressive symptoms and to see the effect of risk factors on depressive symptoms. P value < 0.05 was considered significant.

3. RESULT

Data was collected from 316 woman aged from 20-45 years and they are mother of one or more children and not diagnosed with any psychiatric illness. The Demographic information is as follow. The total number of participants are 316 in the study, 38.61% aged between 31 and 40 years old, followed by 41-45 years old (34.49%), then 20-30 years old (26.90%). The majority (76.58%) had university educational level, followed by secondary school (15.51%).

The descriptive information of the study factors

Table 1 has showed the presence of risk factors in the women. 46.52% had 4 kids or more, followed by 3 kids (21.84%). More than a half (54.11%) had normal delivery, while experienced both and C-section methods had around (23%) each. Only 16.77% had a family history of PPD and only 4.11% smoked during the pregnancy. 13.61% reported that their family member pass away during pregnancies. 32.91% had complications during deliveries. 45.57% had abortion before, 87.34% were supported by the family during deliveries and only 11.71% reported form of violence from husband.

Table 1 Risk factors (N=316)

		N	%
Children	1	47	14.87
	2	53	16.77
	3	69	21.84
	4 or more	147	46.52
Delivery statue	C-section	71	22.47
	Normal Statement delivery	171	54.11
	Experienced both	74	23.42
Was there a family history of PPD?	Yes	53	16.77
	No	263	83.23
Did you smoke during pregnancy?	Yes	13	4.11
	No	303	95.89
Did a family member pass away during your pregnancies?	Yes	43	13.61
	No	273	86.39
Were there any complications during your deliveries?	Yes	104	32.91
	No	212	67.09
Was there any abortion before?	Yes	144	45.57
	No	172	54.43
Did your family support you during your deliveries?	Yes	276	87.34
	No	40	12.66
Was there any form of violence from your husband?	Yes	37	11.71
	No	279	88.29

As in Table 2 the frequency of different depressive symptoms. 75% felt sad, hopeless and angry even over small matters. 45.89% feel guilt or worthlessness, 80.38% felt emotional changes, 57.91% lost interest or pleasure in most or all normal activities, 83.54% felt energy down, 60.76% slept less, while 25% slept more, 58.86% gained weight, while 24.37% lost weight, 41.77% ate less, while 29.75% ate more, only 11.08% had thoughts of death or suicidal attempts, only 6.01% thoughts of hurting new-born.

The association of depressive symptoms with different risk factors

Chi square test was conducted to test association of depressive symptoms and risk factors, only significant relationships were presented as follows:

The association between depressive symptoms and number of children

There was a significant association of symptoms with number of kids ($p<0.05$), it was found that mother with more kids felt sad, hopeless and angry even over small matters, any emotional changes and thoughts of hurting your new-born, more than who got less kids.

Table 2 Depressive symptoms (N=316)

Statement		N	%
Did you feel sad, hopeless and angry even over small matters?	Yes	237	75.00
	No	79	25.00
Did you feel guilt or worthlessness?	Yes	145	45.89
	No	171	54.11
Did you feel any emotional changes?	Yes	254	80.38
	No	62	19.62
Did you lose interest or pleasure in normal activities?	Yes	183	57.91
	No	133	42.09
Did you feel your energy down?	Yes	264	83.54
	No	52	16.46
Did you notice a change in your sleep pattern?	Yes, I sleep more	79	25.00
	Yes, I sleep less	192	60.76
	No change	45	14.24
Did you notice a change in your weight?	Yes, I gained weight	186	58.86
	Yes, I lost weight	77	24.37
	No change	53	16.77
Did you notice a change in your appetite?	Yes, I eat more	94	29.75
	Yes, I eat less	132	41.77
	No change	90	28.48
Did you have thoughts of death or suicidal attempts?	Yes	35	11.08
	No	281	88.92
Did you have thoughts of hurting your New-born?	Yes	19	6.01
	No	297	93.99

As in Table 3 & figure 1 there was a significant association between depressive symptoms and a family history of PPD ($p<0.05$), it was found that mother who had family history of PPD were higher in feeling sad and angry even over small matters (19.83%), guilt or worthlessness (22.07%) and thoughts of death or suicidal attempts (28.57%) than whom did not had family history of PPD.

Table 3 The association of depressive symptoms with family history of PPD (N=316)

Depressive symptoms		Was there a family history of PPD?				
		Yes		No		p value
		N	%	N	%	
Did you feel sad, hopeless and angry even over small matters?	Yes	47	19.83	190	80.17	0.012*
	No	6	7.59	73	92.41	
Did you feel guilt or worthlessness?	Yes	32	22.07	113	77.93	0.020*
	No	21	12.28	150	87.72	
Did you have thoughts of death or suicidal attempts?	Yes	10	28.57	25	71.43	0.048*
	No	43	15.30	238	84.70	

≤0.05; **≤0.01; * ≤0.001*

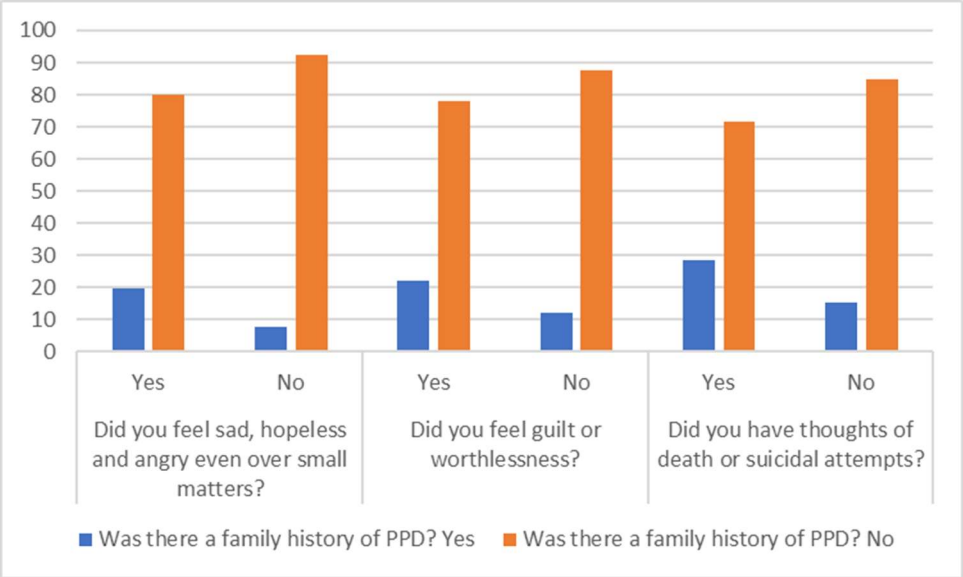

Figure 1 The association of depressive symptoms with family history of PPD

As in Table 4 there was a significant association of depressive symptoms with history of family member passed away during pregnancies ($p<0.05$), it was found that mother who had family member passed away during pregnancies were higher in feeling sad and angry even over small matters (15.61%), loss of interest or pleasure in most or all normal activities (16.94%) and ate more (17.02%) than whom did not had this history.

Table 4 The association of depressive symptoms with h/o family member pass away during pregnancies (N=316)

Depressive symptoms		Did a family member pass away during pregnancies?				
		Yes		No		p value
		N	%	N	%	
Did you feel sad, hopeless and angry even over small matters?	Yes	37	15.61	200	84.39	0.049*
	No	6	7.59	73	92.41	
Did you lose interest or pleasure in normal activities?	Yes	31	16.94	152	83.06	0.043*
	No	12	9.02	121	90.98	
Did you notice a change in your appetite?	Yes, I eat more	16	17.02	78	82.98	0.042*
	Yes, I eat less	21	15.91	111	84.09	
	No change	6	6.67	84	93.33	

*≤0.05; **≤0.01; *** ≤0.001

Table 5 & figure 2 has shown the association with complications during deliveries ($p<0.05$) ($p<0.01$), it was found that mother who had complications during deliveries were higher in feeling sad and angry even over small matters (37.55%), felt guilt or worthlessness (42.07%), felt emotional changes (35.83%), loss of interest in daily routine activities (39.34%) and slept less (17.02%) than whom did not had complications during deliveries.

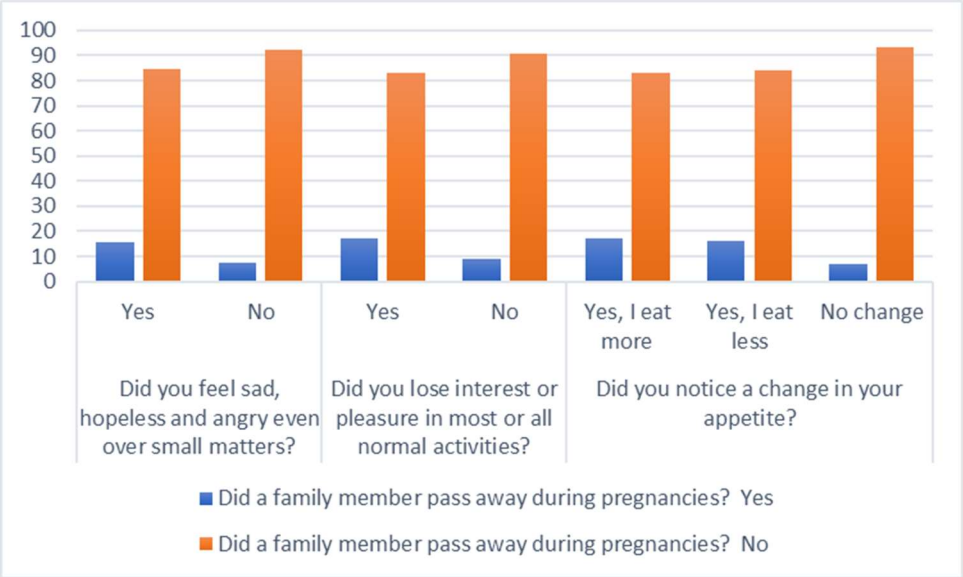

Figure 2 Association depressive symptoms

Table 5 The association of depressive symptoms with complications during deliveries (N=316)

Depressive symptoms		Were there any complications during your deliveries?				
		Yes		No		p value
		N	%	N	%	
Did you feel sad, hopeless and angry even over small matters?	Yes	89	37.55	148	62.45	0.002**
	No	15	18.99	64	81.01	
Did you feel guilt or worthlessness?	Yes	61	42.07	84	57.93	0.002**
	No	43	25.15	128	74.85	
Did you feel any emotional changes?	Yes	91	35.83	163	64.17	0.026*
	No	13	20.97	49	79.03	
Did you lose interest or pleasure in daily activities?	Yes	72	39.34	111	60.66	0.004**
	No	32	24.06	101	75.94	
Did you notice a change in your sleep pattern?	Yes, I sleep more	27	34.18	52	65.82	0.011*
	Yes, I sleep less	71	36.98	121	63.02	
	No change	6	13.33	39	86.67	

≤0.05; **≤0.01; * ≤0.001*

As in Table 6 & figure 3 there was a significant association of depressive symptoms with family support during deliveries ($p<0.05$), it was found that mother who had family support during deliveries were lower in guilt or worthlessness (83.45%) and in having thoughts of death or suicidal attempts (74.29%), than whom did not supported by their family during deliveries.

Table 7 & figure 4 has shown the significant association of depressive symptoms with history of violence from husband ($p<0.05$), ($p<0.01$), ($p<0.001$), it was found that mother who had faced violence from partner were higher in feeling sad and angry even over small matters (15.61%), felt guilt or worthlessness (19.31%), felt emotional changes (13.39%), loss of interest or pleasure in normal activities (15.85%) and felt energy down (13.26%), ate more (17.02%), having thoughts of death or suicidal attempts (25.71%) and thoughts of hurting your new-born (26.32%) than whom did not face violence from husband.

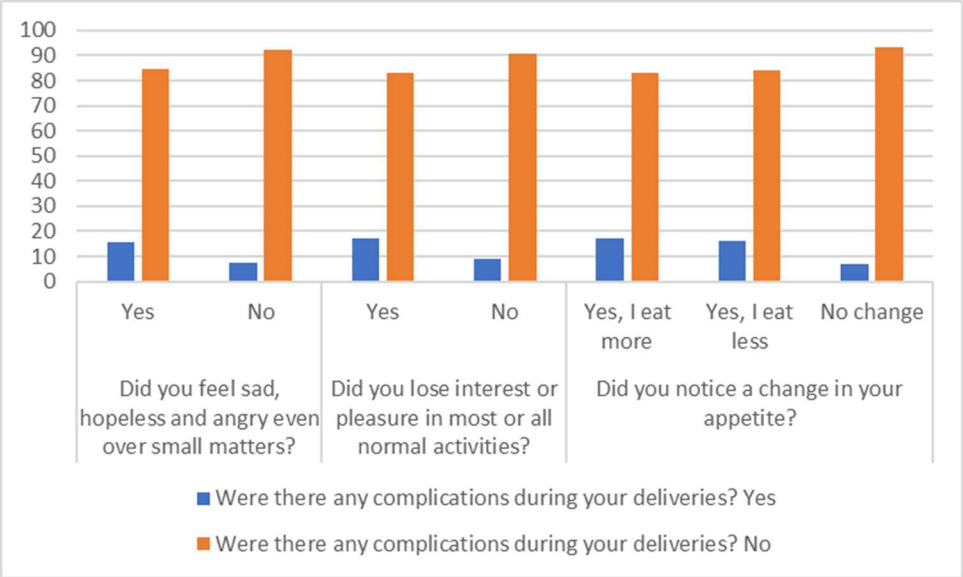

Figure 3 Significant association of depressive symptoms with complications during deliveries

Table 6 The association of depressive symptoms with family support during deliveries (N=316)

Depressive symptoms		Did your family support you during your deliveries?				p value
		Yes		No		
		N	%	N	%	
Did you feel guilt or worthlessness?	Yes	121	83.45	24	16.55	0.050*
	No	155	90.64	16	9.36	
Did you have thoughts of death or suicidal attempts?	Yes	26	74.29	9	25.71	0.014*
	No	250	88.97	31	11.03	

*≤0.05; **≤0.01; *** ≤0.001

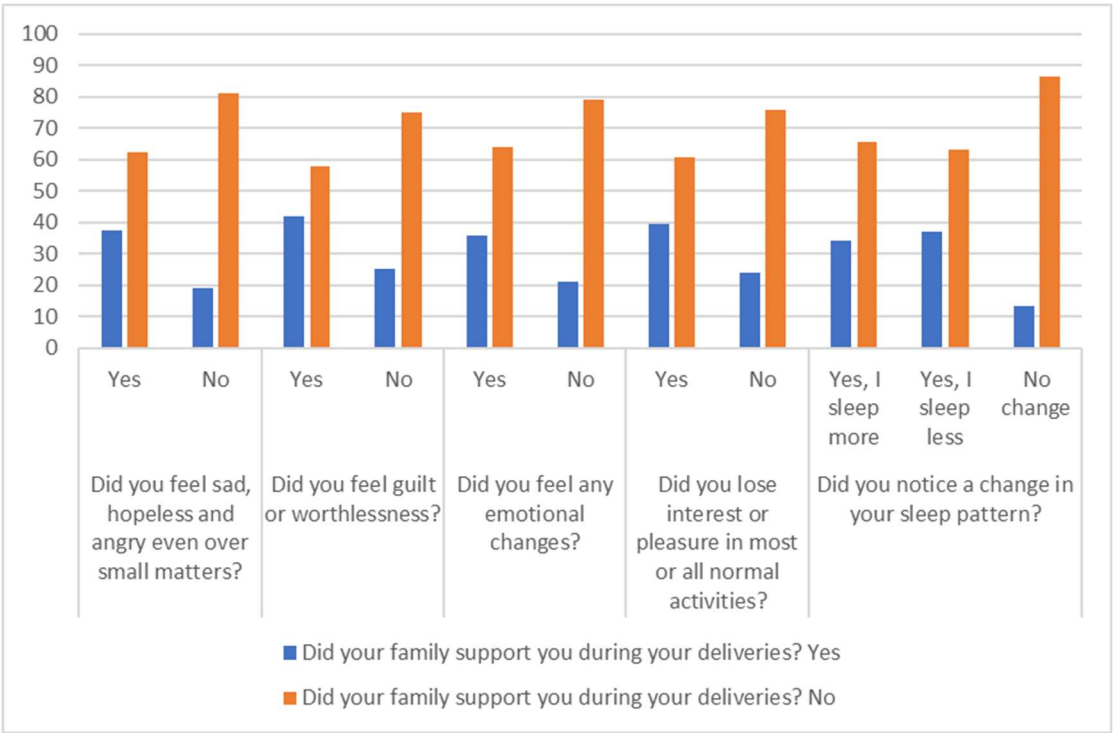

Figure 4 Association of depressive symptoms with family support during deliveries

Table 7 The association of depressive symptoms with violence (N=316)

Depressive symptoms		Was there any form of violence from your husband?				
		Yes		No		p value
		N	%	N	%	
Did you feel sad, hopeless and angry even over small matters?	Yes	37	15.61	200	84.39	<0.001***
	No	0	0.00	79	100.00	
Did you feel guilt or worthlessness?	Yes	28	19.31	117	80.69	<0.001***
	No	9	5.26	162	94.74	
Did you feel any emotional changes?	Yes	34	13.39	220	86.61	0.047*
	No	3	4.84	59	95.16	
Did you lose interest or pleasure in most or all normal activities?	Yes	29	15.85	154	84.15	0.007**
	No	8	6.02	125	93.98	
Did you feel your energy down?	Yes	35	13.26	229	86.74	0.031*
	No	2	3.85	50	96.15	
Did you notice a change in your appetite?	Yes, I eat more	16	17.02	78	82.98	0.043*
	Yes, I eat less	16	12.12	116	87.88	
	No change	5	5.56	85	94.44	
Did you have thoughts of death or suicidal attempts?	Yes	9	25.71	26	74.29	0.006**
	No	28	9.96	253	90.04	
Did you have thoughts of hurting your new-born?	Yes	5	26.32	14	73.68	0.041*
	No	32	10.77	265	89.23	

≤0.05; **≤0.01; * ≤0.001*

4. DISCUSSION

Postpartum depression is an important public health problem which not only affects mothers but the newborns and other members of the family as well. It's not only affecting the woman, family life but has long term effect on the development and growth of the child. Although it has negative effects on society, even then it is among the disorders which are left unrecognized and untreated.

In our study we have seen that all the participants have experienced some of the depressive symptoms during their postnatal periods. There are a high percentage of the mothers to have minor psychological changes like feeling sad or angry over small matter and very low energy. We have quite significant numbers of woman experienced suicidal thoughts. A large population-based study conducted in Taiwan has demonstrated the high risk of suicide among the women with PPD (Lee et al., 2022).

Among the participants 6% mothers have thoughts of harming their baby, it was explained that when the typical symptoms of postpartum depression completely overtake the mother, she is at risk of intentionally harming her baby. The crying baby may exaggerate her frustration that she carries out violent actions like trying to suffocate the baby rather than to calm or cuddle the baby to make him stop crying (Takács et al., 2020).

Although high number of women experienced the depressive symptoms among 316 mothers less than 18% seek medical advice for the problem and only 11% received medication, which is contradictory to high prevalence rate seen in different studies in the Kingdom of Saudi Arabia (Al-Nasr et al., 2020; Alsayed et al., 2021). This explained that although women are aware of the symptoms of PPD but in majority of them it remained undiagnosed and untreated. While assessing the relationship of risk factors with PPD, we found that high parity is associated with more positive symptoms as compared to low parity, these findings are consistent with the two other studies that parity is a risk factor for PPD (Atuhaire and Cumber, 2018; Qandil et al., 2016).

In our study family history of psychiatric disorder have significant association with depressive symptoms (p value=0.048) while Kjeldsen et al., (2022) in a systematic review have reported that family history of psychiatric disorders is a risk factor for developing psychiatric episodes outside the postpartum period, but evidence of the association between familial risk and PPD is not clear. Further studies required to establish this risk factor as predictors so the women can be screened at appropriate time to initiate therapy and to reduce the adverse effects of PPD on the society.

We found that those mothers who lost family members during pregnancy experienced more about feeling sad and hopeless, loss of interest in normal activities and their appetite increased (P value 0.49, 0.43. 0.42) respectively. In the American economic review in 2018 indicated that loss of loved one during pregnancy, not only effect the psychological health of the mother but also the mental

health and development of the child as well (Persson and Rossin-Slater, 2018). This association might be due to the consequences of PPD on the children, they are at risk of a wide range of adverse outcomes, including emotional problems, attention deficit hyperactivity disorder (ADHD) or impaired cognitive development (Glover, 2014).

In this study those women who had complications during deliveries tend to experience more depressive symptoms as compared to the mothers without complication during deliveries. We used the general term; type of complication and mode of delivery were not elaborated in our study. A study conducted by Meky et al., (2020) has found that mode of delivery is a strong predictor of PPD; it has stronger association with emergency caesarian section than elective caesarian section. While in another study, there was no difference in EPDS by mode of delivery. The frequency of PPD was more in women with unscheduled cesarean delivery for non-reassuring fetal heart trace (NRFHT) than other indications for unscheduled cesarean delivery (Lantigua-Martinez et al., 2022).

We should have used more details about the mode of delivery, indication of operative delivery and complication associated with them. The serious depressive symptoms like feel guilt or worthlessness and thoughts of death or suicidal attempts were experienced less in mother who has supportive family. A study conducted in China has concluded that lack of family support in the postnatal period, especially support of the partner, is an important risk factor for the development of PPD (Xie et al., 2009). Another study by Xie et al., (2010) and Miura and Fujiwara, (2017) have further investigated that the association between postnatal social support and PPD is much stronger than that of prenatal social support. This is usually not a problem with majority of the women in Saudi Arabia due to the family centered culture of the Kingdom.

In our study, 11% women faced violence from the husband and unfortunately it has a strong association with the entire component of depressive symptoms. Many studies have shown violence from the partner as an important predictor for PPD (Miura and Fujiwara, 2017; Bulut et al., 2017). The women who were in violent relationships, 50 percent of them screened positive for depression, as compared to 22 percent of mothers who had no history of violent relationships (Xayyabouapha et al., 2022). Although there are many limitations in our study, we did not use the Edinburgh Postnatal Depression Scale as our study was dependent on a recall from history by the mothers who have experienced different depressive symptoms.

5. CONCLUSION

We found out the relationship of different personal and social factors that have strong association with depressive symptoms, like parity, family history of depression, loss of family members during pregnancy, family support and domestic violence from husband. Our study could be helpful to identify the woman at risk of developing PPD. The early identification of the risk factors and appropriate management of these patients will improve treatment outcomes, improving maternal health and new-born development.

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Author Contributions

This work was performed as collaboration among all authors. All have contributed actively to this study.
Naveed Iqbal: Study design, analysis and preparation of final manuscript and corresponding.
Lamya Al-Alshammri: Research idea, data collection and manuscript writing.
Sara Al-Barrak: Research idea, data collection and manuscript writing.
All authors have read the final version of manuscript.

Ethical Approval

The approval was granted by The Research Ethics Committee at University of Hail with No: H-2022-402, date of approval: 5 December 2022.

Informed Consent

Written & oral consent was obtained from all the participants included in the study after explaining the purpose of the research before enrolling them for study.

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Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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