An Observational Study to Assess the Prevalence and Awareness of Postpartum Depression among Females in Chandigarh and Surrounding Areas

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Abstract

Purpose: In females, postpartum depression may be due to abrupt hormonal changes post-pregnancy. We aimed to assess the prevalence of postpartum depression in females residing at Chandigarh and surrounding areas. Other objectives were to assess the awareness of postpartum depression in females and to determine the risk factors associated with postpartum depression.

Methods: A prospective observational study was carried out at selected hospitals and some part of data collection was done via online mode (survey). A total of 100 participants voluntarily took part in the investigation after signing the informed consent form. All of the data was statistically examined and presented.

Results: As per socio-demographic data, the majority of the participants were between the age of 20 and 30 years. Postpartum depression was observed to have a 70% overall prevalence, with participants reporting severe, moderate, and mild depression at rates of 18%, 35%, and 17%, respectively. Participants under the age of 40 were more knowledgeable about "postpartum depression" than those between 20 and 30. A significant correlation was found between postpartum depression and such factors as delivery type, unforeseen pregnancies, and despair during pregnancy ($p<0.222$).

Conclusion: We found a higher proportion of postpartum depression among moderately affected participants. Risk factors like delivery type, unwanted pregnancy, and depression during pregnancy should be addressed attentively in mothers with postpartum depression including follow-up at regular intervals.

Keywords: Postpartum depression, Risk factors, Age, Awareness.

Introduction

Postpartum depression is a kind of temper impairment that could have an effect on each parent following childbirth.[1] Its onset commonly takes place between 1 to 12 months after childbirth.[2] Some of the factors that contribute to the development of postpartum depression include hormone-related physiological changes social links to the records of depression, and new child-associated intimidating thoughts.[3] Hormones such as estrogen, progesterone, thyroid hormones, testosterone, corticotropin-releasing hormone, endorphins, and cortisol have all been linked to postpartum depression.[4] Estrogen and progesterone levels come back to what they were prior to pregnancy in about 24 hours upon giving birth, and this sudden shift might be the cause.[5] However, artificial oxytocin, a medication generally employed to help labor, has been connected to the progression of post-pregnancy despairing and uneasiness.[4] Several studies have shown that altered levels of gamma-aminobutyric acid (GABA) signaling, glutamate, serotonin, and dopamine play important roles in postpartum depression.[6]

In a study, it was found that globally, 20% of women suffer from postpartum depression after giving birth to a child.[7] In another similar kind of study, it was found that nearly 4,00,000 fathers are also dealing with this condition.[8] Postpartum psychosis, a more extreme type of post-pregnancy temperament illness, influences 1 to 2 out of each 1,000 females after labor.[9] In the United States, postpartum psychosis is one of the leading causes of child murder under the age of one year,[10] occurring in approximately 8 out of every 1, 00, 000 births. Although, it is a rare mental illness but should not be ignored.

The norms for diagnosing postpartum depression are like the ones for diagnosing essential despondency or minor melancholy that isn't connected all the time with labor. Within a two-week period, the criteria require at least five of the nine symptoms listed below:

1) Emptiness, sadness, or hopelessness almost every day for the majority of the day, or a depressed mood as observed by others
2) Anhedonia
3) Weight loss or a reduction in appetite
4) Change in sleep patterns
5) A sense of agitation
6) Energy depletion
7) Feelings of guilt or inadequacy
8) Concentration problems or increased hesitancy
9) Recurring thoughts of death, with or without suicidal intent[11]

Besides these, postpartum blues (a low temper that can loaf around for some days after giving birth) and postpartum psychosis are also considered for the diagnosis of postpartum depression.[2]

In order to treat mild to moderate postpartum depression, psychological therapies or antidepressants are employed. A combination of mental and medicinal healing procedures is much more likely to assist females with slight to excessive postpartum depression. For mild and moderate cases, light aerobic exercise has been found to be beneficial.[12] Exogenous oxytocin has only been examined in mice as a therapy for postpartum depression, but the findings seem encouraging for human use as well.[7] Exogenous oxytocin has only been studied in rodents as a postpartum depression treatment, but the results are promising for human application as well.[13] Some newer drugs like Brexanolone, a synthetic analog of the neurosteroid allopregnanolone, were approved by the Food and Drug Administration (FDA) for intravenous use in postpartum depression in 2019. Moreover, SAGE-217 and ganaxolone are two other new allopregnanolone analogs being studied for use in the treatment of postpartum depression.[7] We investigated this study to assess the prevalence and awareness of postpartum depression among females of different age groups along with the risk factors that may be responsible for the occurrence of post-pregnancy mental health illness.

Methodology

A prospective observational study was carried out at selected tertiary care hospitals located in Chandigarh and nearby areas. Some part of the study was conducted virtually with the help of an online survey. For doing so, an online questionnaire was generated and posted on various platforms in order to acquire the responses.

Before recruiting the subjects in the study, subjects were asked to satisfy the inclusion criteria. A total of 100 subjects voluntarily participated in the study after signing the informed consent form that included females with a newborn child/children and ones who were pregnant. This study was investigated for a period of 3 months after obtaining approval from the Institutional Ethics Committee (IEC). For data collection in person, a questionnaire was employed and responses were collected via one-to-one conversation.

An overall study design schema is illustrated in **Figure 1**.

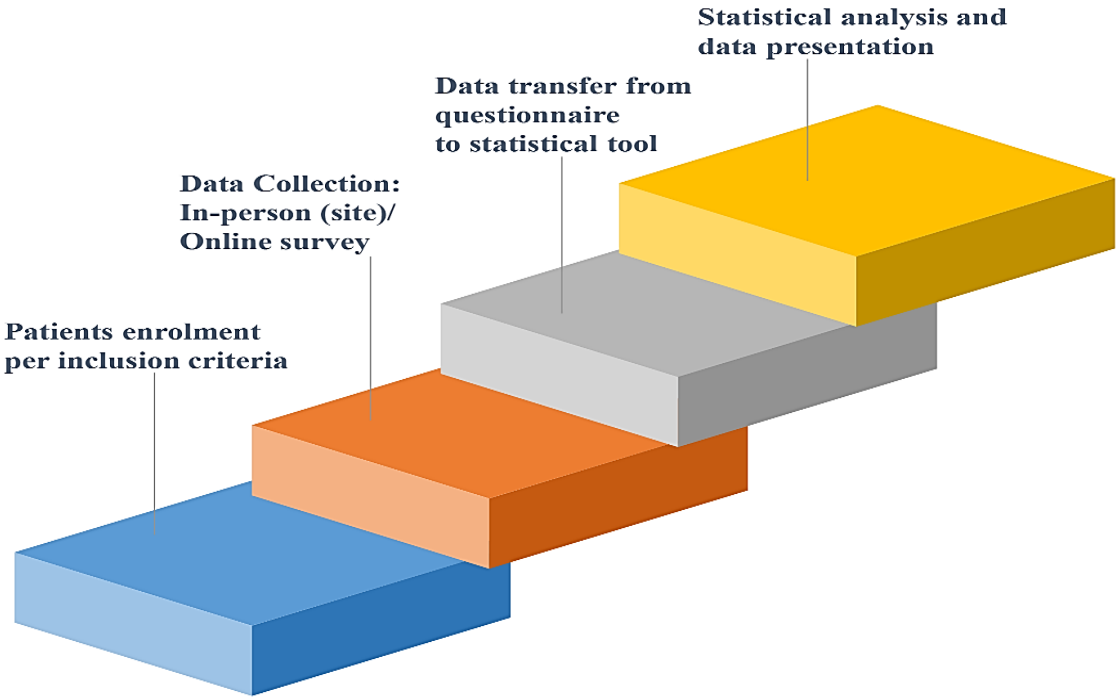

Figure 1 Study design procedures

Results

A total of 150 participants were screened. From these, 100 participants completed the questionnaire and overall study procedures. Based on the extensive information for the relevant questions, a significant volume of data was collected and analyzed.

Socio-demographic characteristics of the respondents

Socio-demographic characteristics of all the respondents are presented in **Table 1**. A majority of the participants were aged between 20-30 years (75%), had secondary and tertiary levels of education (50% each), and were unemployed (66%). Fifty-eight percent participants had unplanned pregnancies and 62% participants had premature deliveries.

Table 1 Demographic Characteristics of Participants

Characteristics Statistic	**Category**	**N=100 n (%)**
Age in years	20-30 years	75 (75%)
	30-40 years	23 (23%)
	40-50 years	1 (1%)
	50-60 years	1 (1%)
Education level	Primary	10 (10%)
	Secondary	50 (50%)
	Tertiary (College/University)	40 (50%)
Occupation	Unemployed	66 (66%)
	Employed	34 (34%)

Pregnancy planned	Planned	42 (42%)
	Unplanned	58 (58%)
Premature delivery	Yes	62 (62%)
	No	38 (38%)

N=Total number of subjects recruited.
n = No. of subjects with demographic characteristics

Prevalence and awareness about postpartum depression

The prevalence and severity of postpartum depression is presented in **Table 2**. The prevalence of postpartum depression was found to be 70% among females who participated in our study. Of the total participants, 18% were severely depressed, 35% were moderately depressed, and 17% had mild depression.

Table 2 Prevalence and Severity of Postpartum Depression

Severity of depression	**N = 100** **n (%)**
Participants with depression	70 (70%)
Mildly depressed	17 (17%)
Moderately depressed	35 (35%)
Severely depressed	18 (18%)
No depression	30 (30%)

N=Total number of subjects recruited.

n = No. of patients suffering from depression or no depression.

At post evaluation of study data on awareness about postpartum depression, study results revealed that a majority of the females (73%) were unaware of postpartum depression. A few females (27%) were familiar with the term "postpartum depression", while the remainder had never heard of it before being enrolled in the study (**Figure 2**).

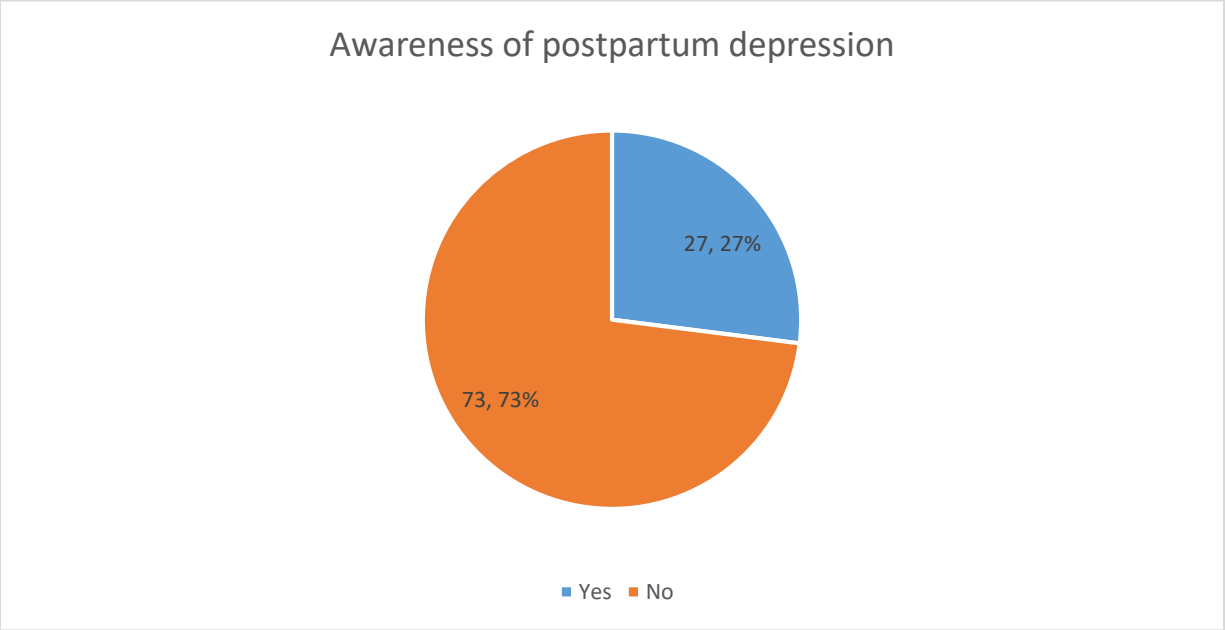

Figure 2 Awareness of Postpartum Depression

Association of age groups with awareness on postpartum depression

Participants between the ages of 30 and 40 were more aware of postpartum depression than those between the ages of 20 and 30 (87% vs 7%; **Table 3**).

Table 3 Association of Age Groups with Awareness on Postpartum Depression

Age-group	**Awareness on Postpartum depression**		**N=100**	**p-value**
	Yes	No		0.008
20 to 30 years	5 (7%)	70 (93%)	75	
30 to 40 years	20 (87%)	3 (13%)	23	
40 to 50 years	1 (100%)	0 (0)	1	
50 to 60 years	1 (100%)	0 (0)	1	
Total	27 (27%)	73 (73%)	100	

N=Total number of subjects recruited.

Risk Factors for Postpartum Depression

This study found that there were various risk factors associated with the occurrence of postpartum depression (**Table 4**). Of 62 (100%) participants with premature delivery, 51 (73%) participants were reported with postpartum depression. Of 51 (73%) participants with unintended pregnancies, 45 (64%) were reported with postpartum depression. Postpartum depression was found in 22 (31%) of the 31 (61%) participants with a history of depression. Additionally, 39 (56%) of the patients in the study exhibited postpartum depression and received no family support, while 57 (81%) reported depression during pregnancy.

Table 4 Risk Factors for Postpartum Depression

Associated risk factors	**Postpartum depression (N=100)**	
	Yes (n=70)	No (n=30)
Delivery Type		
Premature Delivery	51 (73%)	11 (37)
Mature Delivery	19 (27%)	19 (63%)
History of Depression		
Yes	22 (31%)	9 (30%)
No	48 (69%)	21 (70%)
Depression during pregnancy		
Yes	57 (81%)	10 (33%)
No	13 (19%)	20 (66%)
Unwanted pregnancy		
Yes	45 (64%)	6 (20%)
No	25 (36%)	24 (80%)
Family support		
Yes	31 (44%)	8 (27%)
No	39 (56%)	22 (73%)

N= Total number of subjects recruited.

n = No. of patients suffering from depression or no depression.

A significant correlation was found between postpartum depression and such factors as delivery type, unforeseen pregnancies, and despair during pregnancy ($p<0.222$).

Discussion

This observational study was carried out to assess the prevalence of postpartum depression and its awareness among females in Chandigarh and surrounding areas. In this study, we also investigated the risk factors associated with postpartum depression. The objectives of this study were hypothesized because of the support of the literature that implied females develop postpartum pregnancy after giving birth to their babies, although along-with assessment of the prevalence of postpartum awareness, it was also necessary to find the risk factors leading to it.[14, 15] Therefore, the questionnaire was tailored in order to assess the appropriateness of the study objectives. The subjects were selected after they fulfilled the consideration measures which were inclusive of enrolled females who had gone through pregnancy and may have encountered symptoms of postpartum depression.

A total of 42 subjects were engaged in a planned pregnancy while the remaining subjects had an unplanned pregnancy. The data of our study reported that the number of premature deliveries was greater than the normal deliveries. Females who had given birth prematurely were estimated at 66%. Premature deliveries might have a role in the development of subjects' postpartum depression.[16]

The outcomes of the study revealed that the prevalence among the severely depressed females was estimated at 28% compared to moderately depressed, mildly depressed, and no depression at 35%, 17%, and 20%, respectively.

With regard to the awareness of postpartum depression, it was found that only 27% of the total subjects enrolled in the study were aware of postpartum depression, and the rest of the subjects (73.7%) never heard of it. On the contrary, a similar study that was conducted recently reported over 50% of participants who had good knowledge of postpartum depression.[17] Furthermore, we discovered that women (20 participants) in the 30–40 year age range were more aware of postpartum depression than women (5 participants) in the 20–30 year age range. A scarcity of knowledge about how to cope with pregnancy and the appropriate steps to take in order to keep a pregnancy might be the reason.[18]

Data analysis also reported a significant relationship ($p<0.022$) between the age and the type of delivery experienced by the subject (premature or normal). Such a significant relationship was consistent with a recently conducted investigation.[19] The number of premature deliveries was found to be more in females who were in their 20s (63 cases) compared to those who were in their 30s (3 cases). Significant similarities were observed in the results of the study where females with young age ie, below their 20s, had more chances of preterm delivery than the females who were in their 30s. Moreover, the age group of 25 to 29 year was reported as the ideal range for avoiding preterm labor compared to females in their early 20s, and females with ≥35 years of age were associated with preterm delivery.[20] The results of our study suggest that the females in their 30s have more chances of normal deliveries than those in their 20s. Risk factors like delivery type, undesirable pregnancy, and depression during pregnancy were recognized as significantly connected with the postpartum depression status ($p<0.222$). These may have had a role in the event of their postpartum depression.[15, 21]

Conclusion

This study has found that postpartum depression is an important aspect associated with pregnancy. It was found to be more common in females under the age group of 20-30 years compared to 30-40 years. Our study reported an overall high prevalence of postpartum depression but higher proportion was noted among moderately affected participants. Certain risk factors like delivery type (premature), unwanted pregnancy, and depression during pregnancy may had played an important role in the development of postpartum depression. There should be a special need to identify and address all the associated risk factors in order to curb the progression of post-pregnancy mental health issues which may include both pharmacological (drug interventions) and non-pharmacological approaches (psychotherapeutic interventions).

Conflict of interest

The authors whose names are listed in the paper have no affiliations with or involvement in any organization or entity with any financial interest (such as honoraria, educational grants, participation in speakers' bureaus, membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements) or non-financial interest (such as personal or professional relationships, affiliations, knowledge, or beliefs) in the subject matter or materials discussed in this paper.

Data availability statement

The data can be made available upon request from the author.

Ethics statement

This study was approved by the ethics committee. At the beginning of the study, participant was informed that the study was voluntary and they had the rights to quit at any time. The written informed consent was obtained from all individual participants included in this study.

Acknowledgement

Not applicable.

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