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Prevalence and Risk Factors of Postpartum Depression and COVID-19 Pandemic - A Brief Review

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Abstract: ***Background: The levels of postpartum depression scores among mothers were found to be significantly high during the pandemic period when compared to the prepandemic period. An exploration to pinpoint the prevalence and factors related to the pandemic resulting in high PPD scores was to be explored. Methods: Out of 50 studies which were found by search using the keywords in the databases Google Scholar and Springer were evaluated and distilled down to 15, which were verified by the two authors, were reviewed and the findings were tabulated. Results: the average prevalence of PPD from the reviewed studies were found to be 28.97% which was slightly higher than those recorded during the prepandemic periods. The major risk factors identified from the review were concerns regarding contracting infection for self and child, social isolation, quarantine measures, absence of support during labour, apprehension regarding access to healthcare facilities. Conclusion: the review shows the higher prevalence of PPD among postnatal mothers amidst COVID-19 pandemic and there are factors related to the pandemic affecting the level of depression among them. Further exploration is necessary on the controlled manipulation of these factors and intervention strategies, given a possibility of a recurrence of the pandemic as applicable to other traumatic event scenarios.***

Keywords: postpartum depression, COVID-19, prevalence, Risk factors

1. Introduction

Postpartum period, i.e., the period from birth of baby up to 6 weeks after delivery, is usually a joyous time for the new mother and the family. The mother is growing along with the infant, learning new things every day to tackle motherhood. She is also taking baby steps where sometimes she might falter. A strong hand of support is essential for the mother during this period, the lack of which might be a leading cause for the staggering rise in the postpartum depression cases, which was topped by the strike of COVID-19 pandemic. It was a very isolating experience for mothers resulting in increase in perinatal stress and anxiety.

Postpartum psychiatric disorders can be divided into three categories: postpartum blues; postpartum psychosis and postpartum depression. According to American psychological association, postpartum depression a major depressive episode or, less commonly, minor depressive disorder that affects some women within 4 weeks to 6 months after childbirth (APA Dictionary of Psychology, n. d. · The global prevalence of postpartum depression has been estimated as 100–150 per 1000 births [2].

2. Background

The COVID-19 pandemic greatly impacted hospital organization in all affected countries. Hence the restrictions placed during hospital stay regarding companions in delivery room and restricted visitations in hospitals left mothers in a state of isolation which was aggravated when they got home. This placed mothers in a situation of greater psychological vulnerability and heightened the risk of postpartum depression and of disrupted mother-infant bonding [3].

The COVID-19 pandemic represented a significant risk factor for mental distress, especially anxiety, among women in the pregnancy or perinatal period. A statistically significant difference in the severity of postpartum depression symptoms were observed among women making a self-assessment with EPDS scale at the beginning of the COVID-19 epidemic compared to the pre-epidemic period [4]. Mothers showed a significant increase in levels of postpartum depression [5]. An online rapid response survey found that the self-reported maternal depression and anxiety substantially increased from pre to during pandemic period [6]. Survey among postnatal mothers showed that 1 in 5 patients screened positive for major depressive symptoms [7]. Levels of anxiety and depression increased among individuals delivering infants in the COVID-19 epoch, caused maybe by the uncertainty of delivering a baby during a pandemic [8]. Yet there was a study that suggested that the maternal stress might be resilient to stresses of pandemic [8]. A cross-sectional survey study aimed to assess the psychological response of pregnant women during the COVID-19 epidemic showed that more than half of the study subjects rated the psychological impact of the COVID-19 outbreak as severe, and about two-thirds reported higher than normal anxiety [9]. New mothers reported stress of being isolated and experiencing a lack of access to health services which led to an advance in postpartum depression symptoms [10]. The postpartum depression rate was calculated as 17.4% among uninfected mothers [11].

3. Methods

To evaluate the prevalence and risk factors of postpartum depression amidst COVID-19 pandemic, electronic databases were searched. For the review, Google scholar and Springer were searched. The studies were included if they assessed prevalence/ risk factors of PPD amidst COVID-19. Systematic reviews were excluded. The studies were searched individually by the two authors using inclusion criteria and validated by discussion between the two. The findings were tabulated as follows:

Sl. No:	Type of study	N	Postnatal period	Prevalence	Risk factors
1	Cross sectional study [12]	484	1-6 weeks postpartum	30	immigrant women, persistent fever, poor social support, concerns about contracting COVID-19 and certain precautionary measures.
2	Cross sectional study [7]	670		20-33%	Formula feeding, neonatal intensive care unit (NICU) admission, and worry of COVID-19 infection
3	Cross-sectional survey [13]	163	upto 3 months postpartum	30%	An insecure attachment style during delivery, absence of spouse and isolation during labour.
4	online cross sectional survey [14]	209		33.50%	A history of abortion and perceived stress
5	Cross sectional study [15]	157	immediate postpartum (2-4 days)	18.80%	social isolation and quarantine-reduced physical activity during pregnancy, job loss, fear of visiting hospitals during the pandemic, lack of a support person during childbirth, changes in the birth plan and lack of childcare facilities
6	multi-country, cross-sectional, online survey [16]	3523	6 months postpartum	29.30%	low social support, feeding infants using expressed breast milk and perception of insecurity during COVID-19.
7	cohort study [17]	223	day 2 postpartum	16.70%	Maternal age, ethnicity and marital status
8	exploratory study [18]	184	within 56 days postpartum	38.80%	Lack of hospital beds, absence of partner
9	Longitudinal study [19]	246	6 months postpartum	26.80%	Exposure to COVID-19 events and quarantine
10	Cross sectional study [20]	204	Up to 7 days postpartum	17.90%	Stay in the COVID-19 suspect zone
11	observational cohort study [21]	106	4 weeks to 6 months after delivery	49%	threat to health of newborn and family members, social quarantine policies.
12	observational prospective cohort study [22]	330	6-8 weeks postpartum	13.2%	Concern regarding transmission to baby, isolation from family.
13	Longitudinal hybrid survey [23]	600		28.70%	Social restrictions, loss of support, loss of autonomy during pregnancy, and timing of delivery
14	Cross sectional study [24]	220	under 6 months postpartum	31.80%	preterm delivery, pregnancy intention, breastfeeding status, birth interval as well as frequency of ANC received and travel time to health centre
15	Cross sectional study [25]	172	within 4 months postpartum	20.90%	reduced social support, unplanned pregnancy, difficult life situation.

4. Results and Discussion

Of total 50 selected, the studies were distilled down to 15, which specifically suited the inclusion criteria. Out of the 15, nine were cross sectional studies of which two were online surveys. Remaining 6 consisted of two longitudinal surveys, three cohort studies and one exploratory survey. Total number of subjects from all studies was 7491. All the studies used EPDS (Edinburgh Postpartum Depression Scale) as the measuring scale for Postpartum Depression. Risk Factors were assessed using validated questionnaires. The findings were summarized as follows:

Prevalence of postpartum depression during the pandemic:

The average prevalence from the review was found to be 27.89%. The prevalence of anxiety and depression among pregnant women increased significantly during the COVID-19 epidemic [5, 26]. A review of literature from three electronic databases and their analysis showed that the pooled prevalence of PPD was 34% during the COVID-19 pandemic, much higher than the prevalence shown in previous research during the non-pandemic period [7]. A literature search conducted in four electronic databases through 25 articles from 14 countries including India showed that PPD prevalence ranged from 6.4% to 56.9% during the COVID-19 pandemic [28]. A cross-sectional study was performed over a period of 2 months from June 2020 to August 2020 among two hundred postnatal mothers in the postpartum period from 1 to 6 weeks after delivery in which the prevalence of PPD was noted in 34% [29], against a prevalence of 20.4% found in a study conducted in Western India [30] and a rural study conducted in South India showed a prevalence of 19.8% [31] during the pre-pandemic period.

Prevalence of PPD was found to be 11.9% with the level of depression significantly higher in mothers in isolated quarantine wards of COVID-19 suspect zone as compared to non-suspect zones [21]. An observational cohort study conducted from June 2021 to September 2021 in South India showed that almost half of the COVID-infected mothers (49%) showed high EPDS scores (≥10) indicating high prevalence of PPD [22].

There was a contradicting study finding stating that the prevalence of PPD was higher in postpartum women before the COVID-19 pandemic (13.10%) when compared to postpartum women screened during the pandemic (10.78%) [32].

Risk factors of postpartum depression during the COVID-19 pandemic:

As per our review, the lack of social support and social restrictions during COVID-19 was identified as a high risk factor in six studies. Four studies suggested the worry of contracting COVID-19 infection for self and baby was a

significant factor. Three studies showed that the absence of spouse during labour was also a contributing factor. Unplanned pregnancy, uncertainty during COVID, fear of being in the quarantine or COVID suspect Zone, the lack of visit from family, perceived feelings of loneliness, apprehensions in feeding the baby were also seen to contribute to higher scores in PPD scale.

A cross-sectional study among women 1–6 weeks postpartum stated significant risk factors for PPD to be age below 30 years, financial dependence, positive family history of psychiatric illness and PPD, previous girl child, unwanted pregnancy, pressure to have a male child, and complications during pregnancy and delivery. Domestic violence, substance abuse in husband, and relationship issues also increased the risk [30].

It has been observed that the uncertainty surrounding COVID-19, pregnant women feeling social isolation, having greater fear of infection for themselves, as well as their infants, lack of health facilities and increasing number of home deliveries without the assistance of trained health workers heightened the distress and depression. Lack of sufficient and reliable evidence on the risk of transmission of infection of COVID-19 from mother to child, also contributed to increased incidence of postpartum depression [33]. During the COVID-19 pandemic, the factors contributing to psychological distress in postnatal mothers included disruption in prenatal services and reduced access to health care for themselves and their new-born. There was also inadequate access to mental health services [34]. "COVID suspect status" and "stay in suspect zone" wards were the strongest predictors of PPD [21]. Anxious mothers reported several worries, especially about the stigma of COVID-19 infection, support for infant care, and access to infant health services [35]. Other major factors contributing to distress were loneliness (54%) followed by anxiety for the baby (43%), concerned for feeding the baby and prevention of infection to the baby. Other problems faced by the patients in the isolation ward that showed statistical significance were increasing number of postpartum days, lack of recreation in wards, inability to connect with family, boredom, lack of appetite, and poor quality of food The incidence of postnatal depression was 24.5% during COVID-19 pandemic [36]. The level of depression was significantly affected by religion, mode of delivery, family problems during COVID-19, history of psychiatric illness among mothers [22]. Another study showed that women less than 25years of age and with lower educational and socioeconomic status showed high risk for PPD. Primigravidae and mothers who underwent operational delivery also showed high risk for PPD [37]. Increased association of PPD was found with Pandemic-related events such as the emotional and economic impact of social distancing, cessation of routine childbirth visitation policies, online breastfeeding and parenting classes, transitions to telemedicine, and COVID-19 infection worry [7].

5. Conclusion

Postpartum periods have always been stressful to mothers and have always been significantly affected by traumatic events, COVID-19 having a comprehensive impact on the postnatal stress. The studies showed that the prevalence of postpartum depression amidst COVID-19 was 27.89% which was significantly higher than the pre-pandemic period. The quarantine measures, lack of support during labour, social isolation and perceived lack of adequate health care were found to be factors increasing the development of postpartum depression. Even though the phase of stringent restrictions has passed, the threat is still looming overhead. The studies of impact of COVID in postpartum depression and the associated factors can help us to forecast the problems faced by mothers during pandemics and hence control them to reduce the incidence of postpartum depression and improve the psychological outcome of mothers. Further exploration regarding intervention measures is necessary.

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