

Research Article

SOCIAL SUPPORT AND THE ASSOCIATED RISK FACTORS FOR POSTPARTUM DEPRESSION AMONG MOTHERS ATTENDING PRIMARY CARE CENTERS IN MALAYSIA

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Abstract

Background/Objectives: Postpartum Depression (PPD) is the most common maternal distress worldwide. PPD negatively impacts mothers, infants, and the family, affecting psychosocial and economic well-being. The study aims to determine the prevalence of Postpartum Depression in mothers attending primary care centres and the associated risk factors, including perceived social support and breastfeeding experiences.

Methods: This cross-sectional study assessed 230 mothers up to three months postpartum attending two maternal and child clinics in Alor Setar, Kedah, Malaysia, from August to November 2022. Three self-report measures were used, namely the sociodemographic and clinical questionnaires, The Edinburgh Postnatal Depression Scale (EPDS) to assess depression and the Multidimensional Scale of Perceived Social Support (MSPSS) to measure the level of perceived social support.

Results: The prevalence of Postpartum Depression was 2.6%. Univariate analysis found that duration of postpartum, employment status, income groups, depressed mood during pregnancy and presence of breastfeeding difficulties were significantly associated with Postpartum Depression. Predictors of Postpartum Depression were the high-income group (P 0.044 or 10.76 95% CI 1.07-108.76), depressed mood during pregnancy (P 0.026 or 8.31 95% CI 1.29-53.47) and breastfeeding difficulties (P 0.018 or 15.14 95% CI 1.59-144.54).

Conclusion: Postpartum Depression is prevalent in the community. General and targeted Postpartum Depression screening should be done early. Breastfeeding educators' services should be feasible for the mother to reduce the risk of Postpartum Depression.

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Keywords: Postpartum Depression, Primary care, Breastfeeding difficulties, Social support

Introduction

Pregnancy and childbirth are life-changing events affecting mothers' physiological, physical and psychological well-being WHO estimated that 1 in 5 women during pregnancy or after birth would

experience mental health issues, and 20% of those affected will experience suicidal thoughts [1]. Postpartum Depression (PPD) is diagnosed based on criteria for major depressive disorder, with episodes

occurring within the peripartum. In The Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM 5), PPD was specified under the category of 'depressive disorder with peripartum onset', and the symptoms occur before delivery or four weeks after childbirth. International Classification of Disease 10th Revision (ICD-10) classifies the diagnosis as 'Postpartum Depression in mental and behavioral disorders associated with puerperium', with onset within four weeks after birth.

The prevalence of PPD varied widely due to various factors like criteria of assessment, period of evaluation, regional differences, cultural differences, economic factors, and national policy. Systematic review and meta-analysis reviewing 565 studies from 80 different countries or regions revealed that the prevalence of PPD worldwide is 17.22% (95% CI: 16.00–18.51) [2]. In Malaysia, the recent prevalence of Postpartum Depression ranges from 6.8–27.3% [3]. A cohort study done in Sabah revealed that 14.3% of mothers had experienced depression within the first six months postpartum.

The risk factors of Postpartum Depression can be classified into clinical, psychological, and social [4]. Clinical risk factors include previous history of depression, family history of depression, depressed mood during pregnancy, and prenatal anxiety. Others will be delivery by caesarean section, unplanned or unwanted pregnancy, and breastfeeding [5-7]. Breastfeeding for at least 3 months is a protective factor against Postpartum Depression [8]. Early breastfeeding termination was substantially associated with postnatal depression [9]. The prevalence of exclusive breastfeeding for less than six months is 14.5%, according to a survey conducted in Malaysia [10]. The most common difficulties encountered by mothers are nipple crack, pain, and perceived low milk supply [11]. Pain is sourced from mastitis, dermatitis, nipple crack, breast engorgement, or poor latching, which may lead to early termination of breastfeeding [12].

Meanwhile, the psychological risk factors are low self-esteem, marital discord, loneliness, and negative cognitive attributional style [13-14]. Depressive symptoms that present within 24 hours after delivery are a predictor of developing Postpartum Depression. [15]. Mother-child bonding had an association with maternal anxiety and depression [16]. Social risk

factors for Postpartum Depression are young maternal age, unmarried, unemployed, low education, adverse life events, lack of social support, especially during confinement, marital relationship, and low socioeconomic status. Experiences like marital discord, unemployment, the death of a loved one, and moving home could stress a patient [17-18]

Lack of social support may contribute to PPD [19-20]. Social support is a multidimensional concept referring to various types of support a person needs like emotional, financial, instrumental, and information [21]. A mother with higher perceived social support is less likely to develop Postpartum Depression [22]. When the support from family is adequate, the self-reported stress from postnatal mothers is relatively low [14].

This study aims to study the prevalence of PPD amongst healthy mothers in local settings and the associated risk factors, including perceived social support and breastfeeding experiences.

Methods

The current study is a small attempt to briefly highlight the complex health concerns of the elderly, including common physical and mental health disorders. It uses secondary data sources and literature reviews to fulfill the purpose of the study. Further, this study tried to explore the health risk of various diseases and their overall impact on the elderly and health care system. This cross-sectional study was conducted in Alor Setar, Kedah, located northwest of Peninsular Malaysia. The study was conducted in two maternal and child health clinics in the urban and suburban areas of Alor Setar. 230 samples were collected from 1st August 2022 to 30th November 2022.

The inclusion criteria were postpartum mothers at day 1 to 12 weeks postpartum, 18 years and older, able to read and speak in English or Malay language, and able to give written consent. The exclusion criteria were postpartum mothers who had a formal diagnosis of major mood disorders before the postpartum period, unwed mothers, and mothers who had severe psychosis, severe psychomotor agitation, severe psychomotor retardation or mental retardation.

The sample size required is 227. It is based on the open-source online calculator- OpenEpi Version 3, at www.openepi.com. The calculation was made in

reference to previous study 6 and included consideration for possible iteration.

Three self-report measures were used: the sociodemographic and clinical questionnaires, The Edinburgh Postnatal Depression Scale (EPDS) to screen depression, and the Multidimensional Scale of Perceived Social Support (MSPSS) to measure the level of perceived social support.

The participants completed a sociodemographic form that described the age, ethnicity, employment status, total household income, education level, living arrangement, parity, planned pregnancy, and infant's gender. The clinical section includes mode of delivery, perinatal complications, family history of depression, depressed mood during pregnancy, and breastfeeding experience.

The EPDS is a 10-item self-measured questionnaire explicitly designed to measure postnatal depression. Each item was rated on a 4-point scale (0-3), with the total score ranging from 0 to 30. The reliability and validity of the Malay version of the EDPS have been verified. A score of 11.5 presented the optimum cut-off point for 72.7% sensitivity, 95% specificity, and a positive predictive value of 80%. Women with EDPS scores more or equivalent to 12 are considered to have depression and offered referral to primary care clinic or psychiatry department or further assessment.

The subject's perceived social support will be assessed on a 12-item measure from MSPSS. MSPSS measures perceived social support from three sources: family, friends, and significant others. The subjects will rate how strongly they perceived others provide social support to them on a seven-point scale ranging from "very strongly agree" to "very strongly disagree." A mean scale score ranging from 1 to 2.9 could be considered low support; a score of 3 to 5 could be considered moderate support; a score from 5.1 to 7 could be considered high support. The Malay version of the questionnaires was validated with good internal consistency and good test-retest reliability.

The data were analyzed using the Statistical Package for Social Science (SPSS) version 27. Descriptive statistics were used to analyze the sociodemographic characteristics of study respondents. The association between the two variables was tested using Chi-Square's tests. A p-value of less than 0.05 is taken as a significant level. Multiple logistic regressions analysis

was performed on statistically significant univariate logistic regression analysis.

Ethical approval was obtained from the University's Research Ethics Committee. Permission to conduct the study was obtained from The National Medical Research and Ethics Committee (NMRR) of the Ministry of Health (MOH), Malaysia, the District health officials, and the health clinics.

Results

The mean age of respondents is 30.04 ± 4.9 years. All mothers are married. The mean duration of the postpartum period was 4.20 ± 3.87 weeks. Majority of them are in their first month of postpartum (67.4%), Malay ethnicity (87.4%) and come from the lower income group, which is less than RM 4849 per month (58.7%). The numbers of employed mothers and unemployed mothers are equal. The majority of them had a tertiary education level (57.4%), lived with a nuclear family (67.4%), primigravida (55.2%) and had planned pregnancy (55.7%). Half of them (53.3%) had male infants, and 46.5% had female infants (refer to Table 1).

63.9% had a spontaneous vaginal delivery, while 36.1% had instrumental delivery and caesarean section. Most of the mothers have perinatal complications (55.2%), no family history of depression (94.8%), and no depressed mood during pregnancy (85.7%). More than a third (37.4%) of the mothers had exclusive breastfeeding, and 28.7% reported having breastfeeding difficulties. The difficulties reported by the mothers are pain during breastfeeding, nipple crack, engorgement, inverted nipple, poor latching and perceived low milk supply. Most mothers had high perceived social support (94.3%) with a mean score of 6.15 ± 0.56 . (Refer to Table 2)

The prevalence of PPD in this study was 2.6%. From all the characteristics described above, there are significant associations between Postpartum Depression to the duration of postpartum (P 0.039), employment status (P 0.029), income groups (P <0.001), depressed mood during pregnancy (P 0.040) and presence of breastfeeding difficulties (P 0.008).

The significant factors were analyzed in multiple logistic regression (Table 3). In the income group, low income was compared to the middle – high income group. The mothers in the high-income group

had more odds of developing PPD than mothers from the low-income group (P 0.044 OR 10.76 95% CI 1.07-108.76). Those who reported having depressive moods during pregnancy (P 0.026 OR 8.31 95% CI 1.29-53.47) and breastfeeding difficulties (P 0.018 OR 15.14 95% CI 1.59-144.54) were also at more risk of developing PPD.

Table 1: Sociodemographic characteristics of postpartum mothers

Sociodemographic data	All	Depressed	Not Depressed	χ^2	P-Value
	n=230 (%)	n=6 (2.6%)	n=224 (97.4%)		
Duration of postpartum				0.039	
First Month	155 (67.4)	2 (33.3)	153 (68.3)		
Second month	41 (17.8)	1 (16.7)	40 (17.9)		
Third month	34 (14.8)	3 (50)	31 (13.8)		
Ethnicity				0.559	
Malay	201 (87.4)	5 (83.3)	196 (87.5)		
Chinese	27 (11.7)	1 (26.7)	26 (11.6)		
Indian	1 (0.4)	0 (0)	0 (0)		
Others	1 (0.4)	0 (0)	0 (0)		
Employment Status				0.029	
Employed	115 (50)	6 (100)	109 (48.7)		
Unemployed	115 (50)	0 (0)	115 (51.3)		
Income Groups				<0.001	
B40 (lower class)	135 (58.7)	1 (16.7)	134 (59.8)		
M40 (middle class)	79 (34.3)	1 (16.7)	78 (34.8)		
T20 (higher class)	16 (7.0)	4 (66.7)	12 (5.4)		
Education level				0.493	
No formal education	2 (0.9)	0 (0)	2 (0.9)		
Primary	4	0 (0)	4 (1.8)		

	(1.7)			
Secondary	92 (40)	1 (16.7)	91 (40.6)	
Tertiary	132 (57.4)	5 (83.3)	127 (56.7)	
Living arrangement				0.394
Nuclear	155 (67.4)	152 (67.9)	3 (50)	
Extended	75 (67.4)	72 (32.1)	3 (50)	
Parity Group				0.412

Table 2: Clinical characteristics of postpartum mothers

Clinical Characteristics	All	Depressed	Not Depressed	P-Value
	n=230 (100%)	n=6 (2.6%)	n=224 (97.4%)	
Mode of delivery				1
SVD	147 (63.9)	4 (66.7)	143 (63.8)	
Instrumental/Caesarean section	83 (36.1)	2 (33.3)	81 (36.2)	
Perinatal complications				0.694
Yes	127 (55.2)	2 (33.3)	101 (45.1)	
No	103 (44.3)	4 (66.7)	123 (54.9)	
Family history of depression				0.278
Yes	12 (5.2)	1 (16.7)	11 (4.9)	
No	218 (94.8)	5 (83.3)	213 (95.1)	
Depressed mood during pregnancy				0.04
Yes	33 (14.3)	3 (50)	30 (13.4)	
No	197 (85.7)	3 (50)	194 (86.6)	
Exclusive breastfeeding				0.2
Yes	86 (37.4)	4 (66.7)	82 (36.6)	
No	144 (62.6)	2 (33.3)	142 (63.4)	
Breastfeeding difficulties				
Yes	66	5	61	

	(28.7)	(83.3)	(27.2)	
No	164 (71.3)	1 (16.7)	163 (72.8)	
Perceived Social Support				0.29 7
Moderate	13 (5.7)	1 (16.7)	12 (5.4)	
High	217 (94.3)	5 (83.3)	212 (94.6)	

Table 3: Multiple regression analysis, Postpartum Depression as the dependent variable

Variables	B	SE	Adjusted OR/ β	P- Value
			(CI 95%)	
Income Group				
Low-Income	2.3 8	1.1 8	10.76 (1.07- 108.76)	0.044
Higher-Income	Reference			
Depressed mood during pregnancy				
Yes	2.1 2	0.9 5	8.31 (1.29- 53.47)	0.026
No	Reference			
Breastfeeding difficulties				
Yes	2.7 1	1.1 5	15.14 (1.59- 144.54)	0.018
No	Reference			

B: Unstandardized coefficient; SE: standard error for B; β : Standardized coefficient; CI: Confidence Interval for β

Forward and backward methods were applied. Constant was 3.497, no multicollinearity and no interaction. The Hosmer-Lemeshow test showed a P-Value of 0.853 and the classification table is 97.4% correct.

Area under the Receiver Operating Characteristics (ROC) curve was 88.5%

Discussion

The prevalence of PPD in this study (2.6%) is lower than in other studies. The last study done in Kedah in 2004 reported the prevalence of PPD as 21.08% in rural areas compared to 11.24% in urban areas [23]. More recent studies in Malaysia revealed a prevalence of 4.4% to 30% [17,24-26]. Recent systematic reviews and meta-analyses of PPD reported a

worldwide prevalence of 17.22% [27]. Despite the observed variation, recent findings supported that the prevalence of PPD has been increasing over the years. Many factors influence the heterogeneity of the prevalence. For instance, the time of the study conducted, study tools, regional differences in socioeconomic and cultural aspects, and the literacy level of mothers with PPD [28-29]. The structured clinical interview showed a lower prevalence compared to self-reported questionnaires [30]. Socioeconomic factors like a developing country, poor economic development, a country with significant income inequality, and working hour >40 hours per week had increased risk of PPD [29,31-32]. Low-income countries reported a higher prevalence of PPD compared to middle-income countries [33]. Studies conducted in the UK, India and Ethiopia showed an increased risk of PPD in rural areas compared to urban areas [34-36]. Certain cultures in different regions, like China, Africa and Arab countries, welcome the first-born baby boy more than a girl. [37-39]. The reason behind the son's preferences over the daughter might be explained by the male being considered as strength and social security as the male inherits family wealth, take responsibility for taking care of the elderly, is head of the family, and has a role in carrying family's lineage [38,40]. In India, daughters are considered a financial liability as their custom, and the female gives out a dowry for marriage [41]. Gender preferences were not observed to be contributing factor in Western countries [42]. Another possible reason for the lower prevalence may be Malaysia's national maternal and child health policy offering comprehensive, integrated primary and tertiary care services funded by general taxation. After delivery, mothers are instructed to report to the nearest primary care center, where they are assigned to a case manager. The case manager will monitor the baby and mothers' health and issues that arise within the puerperium period. Screening for depression is offered. Another hypothesis of the lower prevalence is due to missing follow-up, barriers like finances, lack of childcare and stigma hindering mothers from coming to the center for assessment [43]. The mothers may also opt out of the evaluation [44]. Mental health stigma significantly affects mothers' perception of PPD and how they seek care [37,45-46]. Depressed mothers might not disclose their symptoms

[47-49]. Mothers with mental health literacy showed positive help-seeking behavior [50]. The Malay ethnicities of Malaysia are primarily Muslim by faith. 87.4% of respondents in this study are of Malay ethnicity. For Muslims, having mental health issues are highly frowned upon, as religion is perceived as a healer and protective factor. Those with mental health issues worry if others perceive their faith as weak; thus, they risk facing discrimination and judgement from others [51]. In Malaysia, postpartum illnesses are culturally constructed as spiritual and mystical disturbances, thus further hindering help-seeking behaviour [52]. This resulted in them seeking the traditional or religious way of helping rather than modern medicine [53-54].

Another factor that may play a role in the lower prevalence of PPD in this study is good social support. Good social support reduces the risk of developing PPD [55-56]. 94.3% of mothers from this study had high perceived social support. Good social support is also a protective factor against anxiety [57]. A qualitative study to explore Malaysian women's experiences in dealing with PPD care revealed that one of their survival strategies is communicating with family members and friends, plus the availability of practical and physical support [58].

Evidence supports the increased prevalence of PPD after three months of postpartum [59]. A cohort study in Sabah, Malaysia, reported that 14.3% of mothers experience depressive mood within the first six months of postpartum [25]. A longitudinal study in Japan studying 1050 mothers revealed that the prevalence of PPD at the first-month post-delivery was 6.3% and 5.1% at three months post-delivery [60]. It is not easy to pinpoint postpartum duration as the sole contributing factor due to confounding factors. For example, fatigue, sleep deprivation, perceived birth trauma, role adjustment or lack of social support [61-64]. A study has shown that maternal fatigue by day 14 postpartum is likely to predict symptoms of depression on day 28 [64]. Further research needed to determine when mothers are more likely to develop depression, with confounding factors removed.

This study found that employed mothers are more prone to PPD. Research suggested that employed mothers are prone to develop PPD due to uncertain job status, work-privacy conflict, a low reward at work, perceived low parenting efficacy and stress from the

role of mother and wife at home [65-67]. Mothers often play a more prominent role in childcare, housework and meal preparation. Paid maternity leave, good support from colleagues and work decision latitude [68-69].

In contrast to most evidence, this study finds that mothers from higher-income groups are at risk of depression compared to the low-income group. To date, there is a lack of research specifically designed to study this population. A comprehensive literature review studying the challenges of physician mothers was adapted to postulate the challenges of mothers from the high-income group, like having a professional job with a stable income, as one of the assumptions. Challenges listed are the imbalance of work-life integration, threats to career accomplishment, burnt out, mood disorders, barriers in continuing breastfeeding or expressing milk, lack of family leave policies, long hours of work, inflexible working time and pressure from unmet societal expectations for maternal contribution toward childcare and raising child [70]. Other related challenges are the inability to breastfeed a child for six months and lack of social support [71].

Consistent with current evidence, depressed mood during pregnancy is associated with PPD [19,72]. Mothers with depressed moods during pregnancy had 3.71 odds of developing Postpartum Depression. (OR 3.71, 95% CI 2.46–5.60) [25]. A narrative review on risk factors for antepartum depression listed the factors as demographic like low socioeconomic status, low education, unmarried, unemployed, lack of social support, health locus of control, unplanned pregnancy, partner violence and history of abuse as a child; and physiological factors like cortisol, amylase and pro-inflammatory cytokines [73].

Exclusive breastfeeding is known to reduce the risk of PPD. Global campaigns promoting breastfeeding awareness placed high societal pressure on mothers to breastfeed [74]. Breastfeeding difficulties are associated with early termination of breastfeeding [75]. A journal article reported guilt and shame from unwanted early breastfeeding cessation contribute to PPD [76]. Other factors include the desire to breastfeed to be a good mother, perceived failure when difficulties occur, irritable infant due to ineffective breastfeeding, which leads to stress and frustration in mothers, and low breastfeeding self-efficacy [77].

Multiple studies demonstrate relationships between low breastfeeding self-efficacy, early termination of breastfeeding and symptoms of depression, which these three factors can contribute to each other [78-80]. Islamic faith that promotes breastfeeding as a child right might also stress mothers who, under the circumstances, are unable to breastfeed a child fully or are struggling to meet their demands [81]. Yusuff et al. explained that breastfeeding triggers the release of oxytocin and prolactin hormones which have antidepressant and anxiolytic effects, besides lactation itself reducing maternal stress [8].

Limitation

Several limitations should be considered when interpreting the findings. First, it is a small-scale study and cross-sectional. The study covers the urban and suburban areas of Kedah. Future research may also cover the rural population, covering different districts and multi-center to catch the diverse ethnic, religions, cultures and demographics of Malaysia. Second, this study uses convenience sampling selection bias cannot be avoided. Bias can be minimized by using other random sampling methods like simple, systematic and stratified random sampling.

Conclusion

In conclusion, robust evidence supports that PPD is prevalent in the community. General and targeted PPD screening should be offered to mothers to catch PPD early. Thus, early intervention can be delivered. Breastfeeding educator services should be made easily accessible to the mothers so they may get instant help, for instance, use of social media or teleconsultation.

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