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Association between psychosocial factors and postpartum depression in South Jakarta, Indonesia

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ABSTRACT

Objective: To investigate the association between psychosocial factors and postpartum depression.
Methods: A cross-sectional design was used. The sample consisted of 166 postpartum mothers recruited by cluster sampling from two public health centers in South Jakarta, Jakarta Province, Indonesia, during February to April 2016. Data collection was through home visits. Instruments employed were: the Edinburgh Postnatal Depression Scale (EPDS); the Childcare Stress Inventory; the Postpartum Support Questionnaire to measure social support; the Dyad Adjustment Scale to measure marital satisfaction; the Rosenberg Self-esteem Scale; and the modified Life Events Questionnaire to measure stressful life events. Data analysis consisted of linear regression.
Results: The prevalence of postpartum depression was 19.88%. Childcare stress, marital satisfaction and stressful life events were associated with postpartum depression ($R^2 = 0.298$, $F = 16.794$, p-value < 0.001). Stressful life events explained the most variance in EPDS scores (ß = 0.220, *P*-value < 0.001), followed by marital satisfaction (ß = −0.321, *P*-value < 0.01) and childcare stress (ß = 0.008, *P*-value < 0.01).
Conclusion: The results of this study can be used to inform the screening of vulnerable sub-groups for postpartum depression and to develop nursing interventions that might alleviate postpartum depression.

Introduction

Postpartum depression (PPD) is the most common serious mental disorder after delivery and has become a considerable public health problem. The most common symptoms of PPD are extreme sadness, feelings of hopelessness and inadequacy, gloominess, inability to feel joy with the baby, severe anxiety, loss of appetite, poor concentration and memory, sleep disturbances, prolonged weariness, social isolation, suicidal thought and thoughts of harming the baby. PPD occurs at least four weeks after birth, [1] which differentiates it from postpartum blues, which can begin in the first or second week postpartum [2].

PPD has negative effects on the mother herself, but also on her children and family [3]. Mothers who experience depression during the postpartum period tend to experience cognitive deficits [4] and sleep disturbance [5,6]; relapse is common over the next 11–12 years [7]. The negative effects on their babies include impaired intellectual and motor development, poor social-emotional development within the first 2 years of life, less secure attachment to the mother, and lower levels of self-esteem [8,9], as well as infant sleep problems [10–12] and feeding problems [11,12]. Furthermore, PPD is associated with the partner's negative mood, such as anxiety, fatigue, distress, worry, frustration, powerlessness, guilt and despair [13,14], family conflict [15] and depression [16–18].

The prevalence of PPD globally ranges from 10% to 20% [19–21]. The World Health Organization (WHO) [22] found that the incidence of depression in the postpartum period is three times greater than in other periods of a woman's life. In Indonesia, the prevalence of PPD has been estimated at 22.3% [23]. According to Basic Health Research, Ministry of Health, Republic of Indonesia [24], depression affects 14 million people aged 15 years or more.

Some studies in Indonesia have addressed the risk factors for PPD, including demographic factors [23,25], complications during pregnancy and delivery and after birth, first birth and low birthweight [23]. Although PPD is considered to be a mental health problem, its psychosocial risk factors have been little studied, and this information is urgently needed by practitioners (such as nurses) and researchers alike. The purpose of the present study was to investigate the psychosocial factors that may contribute to PPD, including childcare stress, marital satisfaction, self-esteem, life stress, and social support, in South Jakarta, Indonesia.

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Materials and methods

A cross-sectional study was carried out. The postpartum mothers were recruited from two public health centers in South Jakarta District, Jakarta Province, Indonesia. The study was conducted from February 2016 to April 2016.

Sample

A cluster sampling technique was used recruit 166 postpartum mothers who were receiving puerperal physical examinations or taking their baby for immunizations at either of the two public health centers. The inclusion criteria included: birth by vaginal delivery or elective C-section, no multiple births, no serious complications during pregnancy and labor or postpartum, no mental illness or family history of psychiatric problems; full-term delivery of the baby (defined as 37–42 weeks of gestation); newborn weight ≥ 2500 g and healthy (stillbirth or neonatal death was an exclusion criterion); ability to read, write and speak Bahasa Indonesia; and living with husband.

Demographic information was divided into mother information and baby information. Mother information included maternal age, monthly family income, educational background, marital status, ethnic group, planned pregnancy, parity, type of delivery, and religion. Baby information included gender and birthweight.

Instruments

In addition to the collection of demographic data, six instruments were used.

The Edinburgh Postnatal Depression Scale (EPDS) Indonesia Version, from the original the EPDS developed by Cox (1987), [26] was used to detect PPD. The EPDS consists of 10 items, on which a Likert scale is used to rate the intensity of depressive symptoms present during the previous seven days. The score for each item ranges from 0 to 3, giving a possible total score ranging from 0 to 30. A cut-off score of 12 or more is taken to indicate PPD [27]. The internal consistency (Cronbach alpha) was 0.79 [28], and in this study was 0.80.

The Dyad Adjustment Scale (DAS) developed by Spanier (1976) [29] was used to measure marital satisfaction. The DAS consists of 32 questions, mostly with five-point Likert-type responses. There are four subscales: Dyadic Consensus (13 items), Dyadic Satisfaction (10 items), Dyadic Cohesion (5 items) and Affective Expression (4 items). Scores for item numbers 1–22, 25–28 and 32 can range from 0 to 5, for item numbers 23 and 24 from 0 to 4, for item numbers 29 and 30 from 0 (yes) to 1 (no), and for item number 31 from 0 to 6. Thus the total score can range from 0 to 151, and a cut-off point of < 100 was taken to indicate marital dissatisfaction. The internal consistency of the DAS in this study was 0.73.

The Rosenberg Self-esteem Scale (RSES), Indonesia version, was translated from the original RSES by Schmitt and Allik (2005) [30]. The RSES has 10 items, all with a Likert scale response from 0 = strongly disagree to 3 = strongly agree. The total score therefore has a possible range of 0–30; a higher score indicates greater self-esteem. The RSES's internal consistency in the present study was 0.79.

The Life Events Questionnaire (LEQ) measures degree of life stress. Norbeck [31] added five items to the original 10-item LEQ to make it suitable for use in a postpartum context. The LEQ-modified contains 15 items with Likert responses from 0 (no effect) to 3 (great effect). The total score can therefore range from 0 to 45; a higher total score indicates greater life stress. The internal consistency of the LEQ-modified was tested before its use in the study, and the Cronbach alpha was 0.78. Its internal consistency in this study was 0.83.

The Childcare Stress Inventory (CSI) was developed by Cutrona (1983) [32] and is designed to measure stressful postpartum events of parenthood, specifically related to childcare. The CSI contains 20 items. Respondents are asked to rate the degree to which they are affected by each item (from 0 = not upsetting to 100 = extremely upsetting). The total possible score ranges from 0 to 2,000; a higher score indicates a higher childcare stress. The internal consistency in this study was 0.74.

The Postpartum Support Questionnaire (PSQ) developed by Logsdon (1994) [33] assesses respondents' perceptions of support received in the postpartum period. It has 34 items, with Likert responses from 0 (no help) to 7 (a lot of help). The total score can range from 0 to 238. The PSQ's internal consistency is Cronbach alpha = 0.90 to 0.94 for the total instrument [34], and before its use in the study a test found it to be 0.98.

All instruments were presented to respondents in Bahasa Indonesia. The DAS, LEQ-modified, CSI and PSQ had never been used before in Indonesia and translations were required for the present study. The researcher conducted back-translation after getting permission from the developers of these instruments. First, the original English versions of questionnaires were translated into Bahasa Indonesia. Next, bilingual experts undertook back-translation from Bahasa Indonesia into English. The researcher compared these two versions of each instrument. The content validity index (CVI) was assessed by five experts from maternal, pediatric and mental health nursing. The CVIs of the DAS, LEQ-modified, CSI and PSQ were 0.95, 0.85, 0.82, and 0.80, respectively.

Data collection

Data collection was conducted after obtaining IRB approval from the Faculty of Nursing Burapha University and permission from the Office of the Health District both in South Jakarta and South Tangerang, Indonesia**.** First, the researcher prepared and trained research assistants in use of the instruments. The researcher provided training for four research assistants, who were registered nurses at each setting. The research assistants helped with data collection. They were trained for 2 days in data collection. The researcher explained the purpose of the study, the role of the research assistants, the instruments to be used and the length of data collection. The researcher allowed the research assistants to ask questions about the process of data collection and instruments and offered a manual for data collection. The researcher prepared all the research instruments, which were collected into a single package.

Postpartum mothers who met the above inclusion criteria at the two public health centers in South Jakarta were invited to take part. If they agreed to participated, the researcher asked for a phone number and an address for home visits. Each participant completed all the instruments at one month postpartum in their home. Participants were allowed to complete the questionnaires without disturbance from others. The study package of instruments took around 30–45 min to complete.

Data analysis

Descriptive statistics are used to characterize respondents and the studied variables. Bi-variate analysis using Pearson product moment correlation was done to analyze relationships between EPDS score and psychosocial factors. Thus, a linear regression, using 'Method Enter', was performed to determine whether postpartum depression was predicted by childcare stress, life stress, social support, marital satisfaction, or self-esteem, at a level of significance of $\alpha = 0.05$.

Results

Demographic data

More than half (58.90%) of the participants had graduated from high school and 22.09% had graduated from university. The majority of participants recorded Islam as their religion (94.47%). Almost 80% were housewives. In almost a third of cases the pregnancy had not been planned. More than one-third of participants were first-time mothers, and almost all had had a vaginal delivery (87.73%). Just over half of the

Table 1
Pearson product moment correlation within and between predictors of EPDS score for postpartum depression (N = 166).

Variable	EPDS score	Childcare stress	Social support	Marital satisfaction	Life stress	Self-esteem
EPDS score	1	0.396**	0.037	−0.202**	0.283**	−0.431**
Childcare stress		1	0.027	−0.011	0.346**	0.415**
Social support			1	0.137	0.069	0.176*
Marital satisfaction				1	0.190*	0.103
Life stress					1	−0.361**
Self-esteem						1

***p < 0.001.
** p < 0.01.
* p < 0.05.

mothers (54.22%) had a baby girl at the current childbirth. Participants' ages ranged from 18 to 43 years (mean = 27, SD = 5.32). Birthweights ranged from 2500 to 4450 g (mean = 3,133.45 g, SD = 406.58).

Risk factors for PPD

EPDS scores ranged from 0 to 20, with a mean of 8.53 (SD = 4.72). Using a cut-off score of 12 or more, the prevalence of PPD was 19.88%.

Correlations between the psychosocial factors and postpartum depression were determined first. Table 1 presents the Pearson product moment correlation data for EPDS score and childcare stress, social support, marital satisfaction, life stress and self-esteem. Childcare stress (r = 0.396) and life stress (r = 0.283) were positively and significantly related to EPDS score. Marital satisfaction (r = −0.202) and self-esteem (r = −0.431) were negatively and significantly related to EPDS score. Social support was non-significantly and weakly correlated with EPDS score (r = 0.037).

To complete the analysis, a linear regression using 'Method Enter' was performed. The analysis showed that childcare stress, marital satisfaction and stressful life events could explain 29.8% of the variance in EPDS score (R^2 = 0.298, F = 16.794, p value < 0.001). Stressful life events explained the most variance (ß = 0.220, *P*-value < 0.001), followed by marital satisfaction (ß = −0.321, *P*-value < 0.01), and childcare stress (ß = 0.008, *P*-value < 0.01) (Table 2).

Conclusion

The prevalence of PPD in this study in South Jakarta, using a cut-off EPDS score of 12 or more, was 19.88% (n = 33). This is similar to the prevalence rates in previous studies in Indonesia, of 18.37% [37] and 22.3% [25] and rates in Asia more widely, as Rumroangwong et al. [38] reported rates in a range from 17% to 48% in developing countries in Asia.

Stressful life events had the strongest association with PPD, and scores on the LES-modified were positively and significantly related to EPDS scores. The present study was consistent with previous studies in this respect [1,20,35,37,38]. The presence of highly stressful life events, including family conflict and sickness of a family member, was a predictor of PPD in Oman [39]. In the present study, though, after adjustment for other stressors, it was a high level of relational stress that was most strongly associated with PPD. Furthermore, experiencing stressful events, such as the death of a significant other, loss of a relationship (through divorce for example), a job change or job loss, moving to a different town, arguments with a partner, financial problems, and baby sickness are known to cause stress and trigger PPD. Financial stress [38,40], adverse life events and high perceived stress [38] are significantly related to PPD.

Table 2
Linear regression analysis of psychosocial factors of postpartum depression in South Jakarta, Indonesia (N = 166).

Predictor	B	SE	ß	T
(Constant)	12.366	4.044		3.060**
Childcare stress	0.008	0.003	0.241	3.196**
Stressful life events	0.220	0.049	0.342	4.453***
Marital satisfaction	−0.321	0.097	−0.229	−3.309**
Self-esteem	−0.013	0.031	−0.033	−0.431

R = 0.546; R^2 = 0.298; Adjusted R^2 = 0.281; F = 16.794; p value < 0.001.
Dependent Variable: Postpartum depression.
*p < 0.05.
** p < 0.01.
*** p < 0.001.

Childcare stress was a significant predictor of PPD in this study. This finding is consistent with previous studies [20,35,41,42]. Mothers in the postpartum period experience physical and psychological changes following childbirth. Physical changes include a decline in estrogen and progesterone, while psychological changes include adjusting to the responsibility of caring for a completely dependent baby. In the early postpartum period, mothers with more sleep disturbances and more frequent feeding during the first four weeks postpartum had high scores on the Childcare Stress Inventory. If this problem continues within the six months after birth, it is associated with PPD.

The present study showed that marital satisfaction was negatively and significantly related to PPD. That is, mothers who had less marital satisfaction were more likely to experience PPD. This finding is also consistent with previous studies [1,2,20,41]. Having a child is assumed to have an effect on marital satisfaction. A poor quality of married life is known to be a risk factor for PPD.

Self-esteem was not associated with PPD in this study. This finding is not consistent with previous studies [2,20,41]. One study suggested that the stress of a negative relationship with a partner may contribute to a lower level of self-esteem, which may in turn lead to PPD [42]. Unstable self-esteem within three months of birth could explain changes in depressive symptoms. In addition, mothers with higher scores for prenatal self-esteem reactivity showed higher levels of PPD [35,38].

Surprisingly, social support was not significantly associated with PPD. Interestingly, numerous previous studies have produced contrary results, in that social support was associated with PPD from the first month postpartum [2,19,20,22,42]. The non-significant association at the first month after birth in the present study might reflect the influence of Indonesian culture. Women who have recently given birth are valued by their extended family. Particularly within the postpartum period (approximately up to 2 months postpartum), new mothers will live with their own mothers and/or sisters, who take care of both them and the baby. They will receive support in domestic housework and childcare from their family of origin, especially their mothers. Another factor might be status of the mother in the family. Almost 81% of mothers in the present study were housewives. Housewives may consider that their husband is the head of the family, and is responsible for earning money, and the wife is responsible for domestic tasks, including baby care. However, a previous study found that available help from a spouse/partner and family support were associated with a lower

incidence of EPDS in the second and third months postpartum [19,35].

In conclusion, the present study found that mothers in South Jakarta exhibited a similar prevalence of PPD to rates reported in previous studies. Moreover, the psychosocial risk factors for PPD were similar to those in other studies. This supports the need for specific points of screening during the first month postpartum for a vulnerable sub-group. The opportunities in Indonesia for screening include the hospital stay after birth, the second-week health check-up and the 1-month health check-up, as most Indonesian mothers have contact with healthcare professionals at these times. The detection of high-risk mothers early during the postpartum period might support preventive interventions for PPD. Such interventions could include strengthening the marital relationship after birth and helping mothers to care for the baby. Screening for PPD by using the EPDS could be incorporated into routine postnatal community practice in Indonesia. However, screening for PPD in hospitals and community centers is not widespread in Indonesia.

Future studies should explore the impact of PPD on sleep, fatigue, breastfeeding, and general well-being from the early postpartum period across the infant's growth and development, particularly for mothers who experience a stressful life event, report high childcare stress, low self-esteem, and less marital satisfaction.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.srhc.2019.02.004.

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