Postpartum depression among women in Dong Anh district, Hanoi

Prevalence and risk factors

Tran, Tho Nhi; Nguyen, Thi Thuy Hanh; Rasch, Vibeke; Gammeltoft, Tine; Meyrowitsch, Dan Wolf; Nguyen, Dung Huu

POSTPARTUM DEPRESSION AMONG WOMEN IN DONG ANH DISTRICT, HANOI: PREVALENCE AND RISK FACTORS

Nhi Tran Tho[1], Hanh Nguyen Thi Thuy[1], Toan Ngo Van[1], Vibeke Rasch[2]
Dan W. Meyrowitsch[3], Tine Gammeltoft[3], Hinh Nguyen Duc[1]

[1]Hanoi Medical University, Hanoi, Vietnam
[2]University of Southern Denmark, Odense, Denmark
[3]University of Copenhagen, Copenhagen, Denmark

ABSTRACT

Postpartum depression (PPD) is a serious mental disorder that is associated with negative outcomes for mothers and children.

Objectives

The objective of the present study was to estimate the prevalence of postpartum depression and to examine the relationship between selected risk factors and postpartum depression.

Methods

The study used a cross sectional study design on 1,337 women and was conducted in Dong Anh district, Hanoi. Participants were interviewed four times from enrolment, at a gestational age of less than 24 weeks to 12 weeks after delivery. Depression was measured by using the Edinburgh Postnatal Depression Scale (EPDS).

Results

The prevalence of postpartum depression was 8.2%. The factors which were significantly associated with depression were physical and/or sexual partner violence (OR=2.67; 95%CI: 1.57-4.52), preterm birth (OR=2.73; 95%CI:1.30-5.75), a husband's preference for a son (OR=1.91; 95%CI: 1.12-3.25), low level of education (OR=2.33; 95%CI: 1.35-4.03 and OR=3.81; 95%CI: 1.95-7.44), a woman's occupation, age of the woman (<25 years) and a lack of family support after delivery (OR=3.78; 95%CI: 2.41-5.92).

Conclusion

These findings call for post partum depression screening among new mothers and identification of risk factors among pregnant women was necessary to improving the health of mothers and children.

Keywords

Postpartum depression, women, risk factors

BACKGROUND

Depression is a serious mental disorder that significantly affects women of childbearing age [1]. It is predicted that by the year 2020, it will be the second leading cause of disease burden, globally [2]. Maternal postpartum depression rates fluctuate between 4.3% and 43.9% [3]. Women suffering from depression are more likely to display negative feelings such as sadness, anxiety, tension and anger [4]; more importantly, suicidal ideation and self-harm [5]. Genetic predisposition, low education level, low income, inoccupation, lack of social support, stress and domestic violence are all indicated as risk factors of postpartum depression [6]. There is a wealth of research on PPD and its associated risk factors, but the majority have applied cross-sectional surveys. A small proportion have used a cohort study [6]. In Vietnam, the limited number of studies involving the topic have been primarily conducted with small sample sizes in Ho Chi Minh and Hue [7, 8]. Previous research conducted in Hanoi has focused on the social, cultural or religious context, as well as the relationship between abuse and depression [9, 10]. Nonetheless, several findings have emphasized that screening women for PPD symptoms and risk factors would prove a suitable intervention [6]. At present, giving a general overview on PPD is a crucial and essential step for Vietnam. The purposes of this study are to identify PPD prevalence and associated risk factors in Dong Anh district, Ha Noi.

Correspondence

Nhi Tran Tho
Add: Institute for Preventive Medicine and Public Health, Hanoi Medical University, No.1 Ton That Tung street, Dong Da district, Hanoi, Vietnam
Email: tranthonhi82@gmail.com

METHODS

Setting, study design and sampling

The study used a cross sectional study design with 1,337 women participants in the Dong Anh district of Hanoi. This is a suburban district of Hanoi and most inhabitants of Dong Anh District are either farmers with agricultural output, livestock breeders, or workers employed in local industrial production. There are two major hospitals in the district (Dong Anh Hospital and Bac Thang Long Hospital). These two hospitals facilitate the majority of the antenatal care services and deliveries in the district.

Measurements and process data collection

Postpartum depression was assessed using the Edinburgh Postpartum Depression Scale (EPDS). EPDS is based on a 10 item questionnaire with four response categories scored from 0 to 3, yielding a total score range of 0-30 [11]. This tool was designed especially for women after delivery and has proven to be an effective tool in evaluating depression in the community [12]. Gibson et al, conducted a systematic review of 37 articles and validated the EPDS scale in multiple country settings. The report recommends an EPDS cut-off point of 9/10 [13]. The EPDS scale was translated into Vietnamese in 1999 [14] and evaluated using Vietnamese migrants in Australia. The study also recommended an EPDS cut-off point of 9/10 with sensitivity and specificity being 86% and 84%, respectively [15]. Recently, this scale again was translated into Vietnamese and evaluated in Vietnam. The study recommended an EPDS cut-off point of 3/4 with a sensitivity and specificity of 69.7% and 72.9%, respectively [16]. In the present study, mothers who had an EPDS total score of 10 or higher were defined as presenting with PPD. Six interviewers with advanced interviewing skills were recruited among the staff of the Population Centre in Dong Anh District. On a monthly basis, the Population Centre received a list of all pregnant women in the Dong Anh District with an estimated gestational age of 22 weeks or less, detailing their name, place of birth, and residential address. All pregnant

women were invited to participate in the study from April 2014 to August 2015. Data was collected during four interviews. The first interview was conducted when women were enrolled at a gestational age of less than 24 weeks; the second interview was performed at a gestational age of 30-34 weeks; the third interview was conducted 24-48 hours after delivery; and the last interview was performed 4-12 weeks after delivery. The participants were interviewed in a private room (in the hospital or community health stations). At the end of each interview, the interviewer arranged the date of the next interview.

Ethical cosiderations

Ethical approval of the research project was obtained from the Research Ethics Committee at Hanoi Medical University (permit no 137, November 29, 2013). Participation in this study was completely voluntary. After having been informed of the purpose of the study, participants signed an informed consent form. Women who displayed signs of depression were provided with the details of a local mental health clinic to provide them access to counselling, care and treatment services.

RESULTS

The original sample comprised 1,350 pregnant women, of whom 1,337 women met the inclusion criteria and accepted to participate in the study. A total number of 63 women (4.6% of the original sample) were subsequently lost to follow-up due to changes regarding place of residence/delivery, miscarriage, or refusal. Hence, 1,274 women who participated in all interviews were included in the final analysis.

Table 1. Descriptive characteristics of study participants (n = 1,274)

Characteristics	No. of women	% of total
Age of women		
Mean ±SD	27 ±4.8	
Minimum	17	
Maximum	47	
Level of education[1]		
Primary school/Secondary school	252	19.8
High school	465	36.5
University/college	557	43.7
Occupation of women		
Small trade	181	14.2
Government employee/Private company/Organization/employee	408	32.0
Work in private company	349	27.4
Farmer	166	13.0
Unemployed/student/Housewife	169	13.4
Living arrangement in relation to partner		
Married and living together	1,267	99.5
Married but living apart	3	0.2
Living with a man, not married	3	0.3
Family support after delivery[2]		
No	245	19.3
Yes	1,028	80.7

[1]*Level of education was grouped into primary school (up to grade 5 years) and secondary school (grade 6-9 years) and high school (grade 10-12 years) and higher education (>12 years).*
[2]*Presence of at least one member of the family who has offered to take care of and support the mother and child*

The descriptive characteristics of the study participants are presented in Table 1. The mean age of participants was 27 years (range: 17-47 years). The vast majority of the women were married and lived with their husband (99.5%), more than half had completed basic education (56.3%), the majority had a job (73.2%) and almost twenty percent of women have had no support from their families after delivery (19.3%).
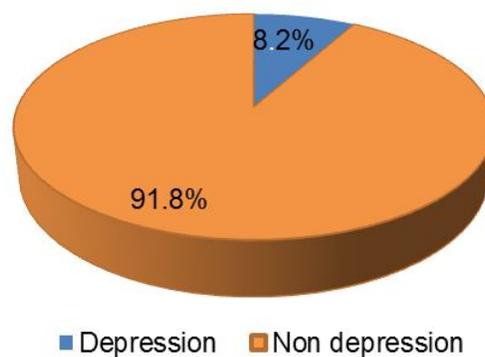
The prevalence of postpartum depression

Figure 1. The prevalence of postpartum depression

A total of 104 women (8.2%) presented with an EPDS score of 10 and above and were defined as having signs of postpartum depression.

The associations between risk factors and signs of depression after delivery are described in Table 2. After adjustment for relevant variables, the results indicated several statistically significant predictors of postpartum depression. These include being employed by government, private company or an **organization**' or '**being** a **farmer**' compared to being engaged in '**small trade**' was a strong predictor for development of signs of depression (AOR=4.05; 95%CI: 1.76-9.30 and AOR=2.82; 95%CI: 1.20-6.59, respectively). Women aged less than 25 years compared to those who were 25 years and above were at a greater risk (AOR= 2.0; 95%CI: 1.27-3.18). In addition, decreasing levels of education were significantly associated with increasing risks of postpartum depression. Hence, the highest risk of postpartum depression was observed among those women who had completed primary school/secondary school or high school as compared to those who had completed a university education (AOR= 3.81; 95%CI: 1.95-7.44 and AOR=2.33; 95%: 1.35-4.03, respectively). Other statistically significant predictors for development signs of depression were **husband's**

preference for a son (AOR=1.91; 95%CI: 1.12-3.25), low gestational age at delivery (AOR=2.73; 95%CI: 1.30-5.57), later aged first pregnancy (AOR=3.07; 95%CI: 1.55-6.07), and lack of family support after delivery (AOR=3.78; 95%CI: 2.41-5.92). Women who experienced sexual violence and/or physical violence had an almost 3 times higher risk of presenting with signs of depression as compared to those who were not exposed to these types of violence (AOR=2.67; 95%CI: 1.57-4.52).

DISCUSSION

The prevalence of postpartum depression

This study indicated that the prevalence of postpartum depression in Dong Anh district was 8.2%. This was consistent with a literature review conducted in other Asian countries which showed that the figure ranged from 3.5% to 63.3% [6]. Similarly, overall prevalence of depression disorders in Europe was 8.6% [17]. However, recent studies carried out in Vietnam discovered higher rates which were 13.4% and 18.1%, respectively [8], [9]. Because the studies used the differences in research instruments, cut-off points, study settings and study time leads to the diversity in resulting rates of PPD.

The associations between risk factors and postpartum depression

Table 2. The associations between risk factors and postpartum depression

Risk factors	Depression (EPDS≥10)	Non depression (EPDS<10)	Bivariate analysis		Multivariate analysis	
			OR (95%CI)	P	OR (95%CI)	P
Age of women (years)						
≥25	51 (49.0)	650 (55.6)	1		1	
<25	53 (51.0)	520 (44.4)	1.30 (0.87-1.94)	0.200	2.00 (1.27-3.18)	0.003
Occupation of women (n=1,273)						
Small trade	9 (8.6)	172 (14.7)	1		1	
Employed by government, private company or organization	43 (41.4)	365 (31.2)	2.25 (1.07-4.72)	0.032	4.05 (1.76-9.30)	0.001
Worker	20 (19.2)	329 (28.1)	1.16 (0.52-2.61)	0.716	1.19 (0.51-2.78)	0.683
Farmer	23 (22.1)	143 (12.2)	3.07 (1.38-6.85)	0.006	2.82 (1.20-6.59)	0.017
Unemployed/student	9 (8.7)	160 (13.7)	1.08 (0.42-2.78)	0.881	1.44 (0.52-3.95)	0.477
Level of education[1]						
University/college	36 (34.6)	521 (44.5)	1		1	
High school	39 (37.5)	426 (36.4)	1.32 (0.83-2.12)	0.241	2.33 (1.35-4.03)	0.002
Primary school/Secondary school	29 (27.9)	223 (19.1)	1.88 (1.13-3.15)	0.016	3.81 (1.95-7.44)	0.000
Age of women at first pregnancy						
<20	15 (14.4)	243 (20.8)	1		1	
≥20	89 (85.6)	926 (79.2)	1.55 (0.89-2.74)	0.125	3.17 (1.62-6.18)	0.001
Gestational age at delivery[2] (weeks)						
≥37	92 (88.5)	1108 (95.9)	1		1	
<37	12 (11.5)	47 (4.1)	3.07 (1.57-6.00)	0.001	2.73 (1.30-5.75)	0.008
Husband's preference for a specific sex of child[3]						
No preference	23 (22.1)	400 (34.4)	1		1	
Preference for girl	25 (24.0)	245 (21.1)	1.77 (1.14-3.10)	0.056	1.88 (0.99-3.54)	0.050
Preference for son	56 (53.85)	519 (44.6)	1.88 (0.99-3.20)	0.014	1.91 (1.12-3.25)	0.017

Risk factors	Depression (EPDS≥10)	Non depression (EPDS<10)	Bivariate analysis		Multivariate analysis	
			OR (95%CI)	P	OR (95%CI)	P
Family support after delivery[4]						
Yes	59 (56.7)	969 (82.9)	1		1	
No	45 (43.3)	200 (17.1)	3.70 (2.44-5.61)	0.000	3.78 (2.41-5.92)	0.000
Physical violence and/or sexual violence during pregnancy						
No	76 (73.1)	1041(89.0)	1		1	
Yes	28 (26.9)	129 (11.0)	2.97 (1.86-4.76)	0.000	2.67 (1.57-4.52)	0.000

[1]Level of education was grouped into primary school (up to grade 5 years) and secondary school (grade 6-9 years) and high school (grade 10-12 years) and higher education (>12 years).

[2]Based on gestational age determined by ultrasound scanning performed during enrolment (3rd interview)

[3]Husband's expressed preference of the sex of the unborn child (present pregnancy)

[4]Presence of at least one member of the family who has offered to take care of and support the mother and child

According to a comparison of three psychometric instruments performed by Tran Tuan et al., [16], the prevalence would be 49.1% if the cut-off point of 3/4 were applied. In the context of Vietnam, the cut off point above 4 should be taken in consideration. Thus, the differences in research instruments, cut-off points, study settings and study time leads to the diversity in resulting rates of PPD.

Postpartum depression and associated factors
The study found a strong link between PPD and physical and/or sexual violence during pregnancy. This finding was consistent with a meta-analysis study and another study conducted in Brazil, which illustrated that women who were abused were 3 times more likely to be depressed after childbirth than those who were not [18, 19]. Furthermore, the current study showed that occupation, low education level, first pregnancy above 20 and women under 25 were significant risk factors for PPD, which was similar to others studies in Asia countries [6, 20]. Additionally, the risk of PPD in women who experienced preterm labour was three times higher than those without, which was consistent with another study conducted by Vigod et al [21]. Those who did not receive any postnatal support were four times more likely to be depressed. The findings also highlighted the important role of postnatal support for women. Likewise, women whose husbands preferred a son to a daughter were twice as likely to develop postpartum depression in comparison with those who did not attach special importance to foetal sex. Several studies reported a similar situation in regards to sex preference in Asian countries, especially, in rural areas of China, India, Vietnam, Nepal and Pakistan [6, 22, 23]. More importantly, most Vietnamese locals have certain beliefs relating to the afterlife, these belief see that it is necessary to have sons to perpetuate the family's tradition and worship their ancestors. This, in addition to the two-child policy, seriously affect a woman's mental health by putting pressure on them to bear a son, when such a feat is uncontrollable [22]. In China, the risk for PPD in women who gave birth to girls was three times higher than that in women who procreated sons [23].

Research strengths and limitations
One of the most prominent advantages of this study was the adequate sample size for analysing the relationship between PPD and associated factors. In addition, the data was relatively accurate and trustworthy due to the cohort design. The research topics, depression and abuse, however, were both sensitive subject matter, which means there is potential for participants to not completely disclose their current status, which would affect the estimation process. More importantly, PPD was assessed by using a validated instrument and respondent self-reporting, without any clinical symptoms.

CONCLUSIONS
Postpartum depression is common. The study has found that factors relating to postpartum depression include physical and/or sexual partner violence, preterm birth, a woman's' age at first pregnancy >21, husband's preference for a son, low level of education, a woman's occupation, age of the woman (<25 years) and lack of family support after delivery. Therefore, screening for depression among new mothers and identification of risk factors among pregnant women was necessary to improving the health of mothers and children.

ACKNOWLEDGEMENT

REFERENCES

1. Gavin NI, Gaynes BN, Lohr KN, et al. Perinatal depression: a systematic review of prevalence and incidence. Obstet Gynecol (2005); 106(5): 1071-1083.

2. WHO, Mental health: new understanding, new hope, World Health Organization, Geneva (2002).

3. Rich JL, Byrne JM, Curryer C, et al. Prevalence and correlates of depression among Australian women: a systematic literature review, January 1999-January 2010. BMC Res Notes (2013); 6(1): 424.

4. Pooler J, Perry DF, and Ghandour RM. Prevalence and Risk Factors for Postpartum Depressive Symptoms Among Women Enrolled in WIC. Matern Child Health J (2013); 17(10): 1969-1980.

5. Evans J, Heron J, Francomb H, et al. Cohort study of depressed mood during pregnancy and after childbirth. BMJ (2001); 323(7307): 257-260.

6. Klainin P. and Arthur DG. Postpartum depression in Asian cultures: A literature review. Int J Nurs Stud (2009); 46(10): 1355-1373.

7. Fisher JRW, Morrow MM, Nhu Ngoc NT, et al. Prevalence, nature, severity and correlates of postpartum depressive symptoms in Vietnam. BJOG Int J Obstet Gynaecol (2004); 111(12): 1353-1360.

8. Murray L, Dunne MP, Van Vo T, et al. Postnatal depressive symptoms amongst women in Central Vietnam: a cross-sectional study investigating prevalence and associations with social, cultural and infant factors. BMC Pregnancy Childbirth (2015); 15(1).

9. Fisher J, Tran TD, Biggs B, et al. Intimate partner violence and perinatal common mental disorders among women in rural Vietnam. Int Health (2013); 5(1): 29-37.

10. Do KN, Weiss B, and Pollack A. Cultural beliefs, intimate partner violence, and mental health functioning among Vietnamese women. Int Perspect Psychol Res Pract Consult (2013); 2(3): 149-163.

11. Cox JL, Holden JM, and Sagovsky R. Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. Br J Psychiatry (1987); 150(6): 782-786.

12. Figueira P, Corrêa H, Malloy-Diniz L, et al. Edinburgh Postnatal Depression Scale for screening in the public health system. Rev Saúde Pública (2009), 43: 79-84.

13. Gibson J, McKenzie-McHarg K, Shakespeare J, et al. A systematic review of studies validating the Edinburgh Postnatal Depression Scale in antepartum and postpartum women. Acta Psychiatr Scand (2009); 119(5): 350-364.

14. Barnett B, Matthey S, and Gyaneshwar R. Screening for postnatal depression in women of non-English speaking background. Arch Womens Ment Health (1999); 2(2): 67-74.

15. Department of Health, Government of Western Australia. Using the Edingburgh Postnatal Depression Scale Translated into languages other than English (2006).

16. Tran TD, Tran T, La B, et al. Screening for perinatal common mental disorders in women in the north of Vietnam: A comparison of three psychometric instruments. J Affect Disord (2011); 133(1-2): 281-293.

17. Ayuso-Mateos JL, Vázquez-Barquero JL, Dowrick C, et al. Depressive disorders in Europe: prevalence figures from the ODIN study. Br J Psychiatry (2001); 179(4): 308-316.

18. Wu Q, Chen H-L, and Xu X-J. Violence as a risk factor for postpartum depression in mothers: a meta-analysis. Arch Womens Ment Health (2012); 15(2): 107-114.

19. Faisal-Cury A, Menezes PR, d'Oliveira AFPL, et al. Temporal Relationship Between Intimate Partner Violence and Postpartum Depression in a Sample of Low Income Women. Matern Child Health J (2013); 17(7): 1297-1303.

20. Carlson DL. Explaining the curvilinear relationship between age at first birth and depression among women. Soc Sci Med (2011); 72(4): 494-503.

21. Vigod S, Villegas L, Dennis C-L, et al. Prevalence and risk factors for postpartum depression among women with preterm and low-birth-weight infants: a systematic review: Risk of postpartum depression in mothers of preterm and low-birth-weight infants. BJOG Int J Obstet Gynaecol (2010); 117(5): 540-550.

22. Nanda P, Gautam MA, Verma R, et al. Study on Gender, Masculinity and Son Preference in Nepal and Vietnam. Int Cent Res Women New Delhi India (2012).

23. Xie R, He G, Liu A, et al. Foetal gender and postpartum depression in a cohort of Chinese women. Soc Sci Med (2007); 65(4): 680-684.