ปัจจัยทำนายภาวะซึมเศร้าในมารดาหลังคลอด เมืองไฮ่เฟือง ประเทศสาธารณรัฐสังคมนิยมเวียดนาม

FACTORS PREDICTING POSTPARTUM DEPRESSION AMONG WOMEN IN HAI PHONG CITY, VIETNAM.

อวน ทิ เฮือง (Oanh Thi Hoang' M.N.)[1]
วรรณี เดียวอิศเรศ (Wannee Deoisres, Ph.D)[2]
วรรณทนา ศุภสีมานนท์ (Wantana Suppaseemanont, Ph.D)[3]

บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาอัตราความชุกและปัจจัยทำนายภาวะซึมเศร้าหลังคลอดในมารดาที่อาศัยในเขตชุมชนเมือง กลุ่มตัวอย่างเป็นในมารดาในระยะ 4 ถึง 12 สัปดาห์หลังคลอด ที่มารับบริการตรวจสุขภาพหรือพาบุตรมารับวัคซีนที่ศูนย์บริการสุขภาพชุมชนในเขตอำเภอโหงว เกวียง เมืองไฮ่เฟือง จำนวน 108 คน เก็บข้อมูลโดยใช้แบบสอบถามจำนวน 6 ชุด วิเคราะห์ข้อมูลโดยสถิติพรรณนาและการวิเคราะห์ถดถอยพหุคูณ ผลการศึกษาพบความชุกของภาวะซึมเศร้าหลังคลอดร้อยละ 21.3 (คะแนนแบบวัด Edinburgh Postnatal Depression Scale: EPDS ≥ 13) ปัจจัยคัดสรรทุกปัจจัยซึ่งประกอบด้วย ความเครียดจากการเลี้ยงบุตร แรงสนับสนุนทางสังคม ความพึงพอใจในชีวิตสมรส และความรู้สึกมีคุณค่าในตนเอง สามารถร่วมกันอธิบายความผันแปรของภาวะซึมเศร้าหลังคลอดได้ร้อยละ 55.6 โดยความเครียดในการเลี้ยงดูทารกเป็นปัจจัยที่มีอิทธิพลสำคัญที่สุด (β -.36, $p < .001$) ผลการศึกษาชี้ให้เห็นว่ามารดาหลังคลอดในเวียดนามมีภาวะซึมเศร้าในอัตราที่สูง ดังนั้นพยาบาลควรมีการติดตามประเมินภาวะซึมเศร้าในมารดา หลังคลอดและให้การพยาบาลเพื่อการป้องกัน โดยเน้นแก้ไขปัจจัยที่มีอิทธิพลดังกล่าว

คำสำคัญ: ภาวะซึมเศร้าหลังคลอด, มารดาหลังคลอด, เวียดนาม

Abstract

This study aimed to determine prevalence and factors that may predict postpartum depression among postpartum mothers in an urban district of Vietnam. One hundred and eight mothers between 4 to 12 weeks postpartum were randomly selected from four communal health centers in the Ngo Quyen district, Hai Phong, Vietnam. Six self-report questionnaires were used to collect data. The data was analyzed

[1]*Master Nursing Student at Faculty of Nursing, Burapha University, Thailand; Lecturer at Hai Phong University of Medicine and Pharmacy, Vietnam. Email: hoangoanhyhp@gmail.com*
[2]*Associate Professor, Faculty of Nursing, Burapha University, Thailand. Email: wannee@buu.ac.th.*
[3]*Lecturer at PhD, Faculty of Nursing, Burapha University, Thailand. Email: suppasee@gmail.com*

using descriptive statistics and standard multiple regressions. The results of the study revealed that prevalence of probable depression was 21.3% (EPDS ≥ 13). Multiple regression analysis showed that 55.6% of the variance in postpartum depression was explained by childcare stress, social support, marital satisfaction, and self-esteem. The strongest predictor of postpartum depression was child care stress (β = -.36, p < .001). It is concluded that prevalence of postpartum depression in Vietnam is high. Nursing interventions need to be developed by focusing on early detecting postpartum depression and manipulating predicting factors, such as decreasing childcare stress, promoting social support, marital satisfaction, and self-esteem.

Keywords: postpartum depression, postpartum mothers, Vietnam

Introduction

Postpartum depression (PPD) has been found to be a major international health concern due to its prevalence and associated consequences. The American Psychiatric Association's Diagnostic and Statistical Manual (DSM IV; APA, 2000) defined PPD as a non-psychotic major depressive disorder with distinguishing diagnostic criteria that often begin within four weeks postpartum. Manifestations of PPD include depressed mood, fatigue, anorexia, insomnia, psychomotor agitation or retardation, excessive guilt and shame, inability to concentrate, loss of self and suicidal thoughts (APA, 2000; Beck, 2002c)

Worldwide, the prevalence of PPD is approximately 13% (Gaillard, Le Strat, Mandelbrot, Keïta, & Dubertret, 2013). However, this prevalence is varied, ranging from 4.4% to 73.7%; and depends on regions of studies, samples, instrument used to measure depression, statistical methods, time of assessment, and cultural characteristics of population studied (Leahy-Warren & McCarthy, 2007). A systemic review of perinatal mental disorder in Asian countries found mean prevalence of PPD was 21.8% (Roomruangwong & Epperson, 2011). PPD has a profound impact not only on maternal health, but also implications for the developing child and wider family relationships (Tsivos, Wittkowski, Calam, & Sanders, 2011). It was found as an important cause of low birth weight, childhood stunting, under nutrition, infections. It also adversely affects the cognitive, social-emotional, and behavior development of the child (Earls, 2010; Patel, Rahman, Jacob, & Hughes, 2004). Beside adverse effects on children, postpartum depression may influence family relationships and conflicts such as marital discord, divorce, family violence, substance use and abuse, child abuse and neglect (Earls, 2010).

There are many factors influencing PPD. Beck (2001; 2002b), in the process of redefining postpartum depression theory, had conducted a meta-analysis of 84 studies and found thirteen predictors or risk factors of PPD including prenatal depression, childcare stress, life stress, social support, prenatal anxiety, marital satisfaction, history of depression, infant temperament, maternity blues, self esteem, socioeconomic status, marital status, and

unplanned or unwanted pregnancy. Four factors consistently found to relate to PPD were childcare stress, social support, marital satisfaction, and self-esteem. The findings revealed that women who had high level of childcare stress were more likely to experience PPD than those with low level of childcare stress (Ju-Eun, 2009; Leung, 2001; Leung & Martinson, 2005; Murray, 2012). Social support is also an important element that associated with PPD. The greater the level of social support received by the women, the lower the risk of postpartum depressive symptoms is experienced (Eastwood, Jalaludin, Kemp, Phung, & Barnett, 2012; Heh, Coombesb, & Bartlettc, 2004; Xie, He, Koszycki, Walker, & Wen, 2009). Another predictor of PPD is marital satisfaction. It has a negative relationship with PPD (Boyce & Hickey, 2005; Lee, Yip, Leung, & Chung, 2004; Munaf & Siddiqui, 2013). Self-esteem also plays a significant role in contributing to PPD. It has been found that high levels of self-esteem are linked to adaptive coping behaviors such as eliminating the source of stress and depression (Tsao, 2007; Wang, Jiang, Jan, & Chen, 2003).

There were only two previous studies focusing on prevalence of PPD in Vietnam. One study conducted in the south of Vietnam showed the rate of PPD was 33% (Fisher, Morrrow, Nhu Ngoc, & Hoang Anh, 2004). Another studied in Thua Thien Hue, Central of Vietnam, indicated 18.1% of women depressed for which the proportion was higher in urban women (20.4%) than rural women of 15.8% (Murray, 2012). It could be seen from these results that PPD is significant problem in Viet Nam with its rate was equivalent or even higher comparing to mean in Asian region (21.8%). However, study on PPD in Viet Nam is still limited and challenging. Moreover, these previous studies in Viet Nam have been focused on demographic and social economic factors rather than psychosocial factors. Therefore, this study was conducted to examine the prevalence of PPD and factors predicting PPD among women in Vietnam

Theoretical framework

Beck's Postpartum Depression Theory was used as the conceptual framework of this study. The theory was initially developed in 1993 to provide insight understand the experience of women who suffer from PPD (Beck, 1993; McEwin & Wills, 2007). Since the development of this theory, Beck has published fourteen other research studies and has redefined the theory by examining twenty-two concepts. The first two concepts described postpartum mood disorder and loss of control. Concepts three through fifteen described significant predictors or risk factors for PPD. Ten predictors which are considered to have a medium relationship with PPD are prenatal depression, childcare stress, life stress, social support, prenatal anxiety, marital satisfaction, history of depression, infant temperament, maternity blues, and self esteem. Three predictors that have a small relationship are socioeconomic status, marital status, and unplanned or unwanted pregnancy (Beck, 2002b). Concepts sixteen through twenty-two represent distillation of all predictors and risk factors that are used to screen women for the symptoms of PPD (Maeve, 2010).

Beck's Postpartum Depression Theory is very powerful for predicting PPD. According to this theory, prenatal depression and history of depression were two strongest factors that predict PPD. However, prenatal depression and history of depression are not screening in Vietnam. Moreover, previous studies in Vietnam have focused on some factors in this theory such as social economic status, planned/unplanned pregnancy. Therefore in this study, researcher examined some of the rest factors that potentially influence PPD in Vietnamese women. These were childcare stress, social support, marital satisfaction, and self-esteem. Beck's Postpartum Depression Theory indicated that these fours factors have medium effect size relationship with PPD.

Research Methodology

Sample and setting

This cross sectional study was conducted from January to April, 2015 at four communal health centers located in Ngo Quyen District an urban district in Northern Vietnam. One hundred and eight postpartum women were recruited from a population of 290 mothers who bring their babies to vaccination by random sampling technique. The participant of this study had to be, mothers who were between the 4th to 12th postpartum week, aged 18 years or older, and have delivered a full term singleton baby with no complication during the postpartum period.

Research instruments

General characteristics were recorded, including socio-demographic characteristics (maternal age, education level, occupation, family income, and marital status) and obstetric characteristics (parity, mode of delivery, baby gender, and infant birth weight)

Postpartum depression was measured by Edinburgh Postnatal Depression Scale (EPDS: Cox, Holden, & Sagovsky, 1987). This is a 10-items self-report questionnaire that assesses postpartum depressive symptomatology during the last 7 days. Items are rated on a 4-point scale. The total score ranged from 0 - 30, with higher scores indicating elevated risk for PPD. EPDS score ≥ 13 indicated probable depressive disorders. The EPDS scale was already validated in Vietnam with the internal reliability Cronbach's alpha was .75, which is acceptable (Thach et al., 2011).

Childcare stress was measured by a self-report questionnaire which was modified from Childcare Stress Inventory (CSI: Cutrona, 1984). It comprises 20 items asking about stressful events related to childcare such as infant's health problems, managing childcare, interpersonal relationships related to childcare. Items were rated on a yes-no scale (yes = 1, no = 0). The total score ranged from 0 to 20, where higher scores indicating a higher degree of child-care stress.

Social support was measured by using a questionnaire modified from Postpartum Depression Predictors Inventory-Revised (PDPI-R: Beck, 2002b). It consisted of 12 items with 3 subscales: partner, family, and friends. These items asked participants about their perception that supports are available to them. Participants indicated their agreement with each of the items on 5-point Likert

scale. The possible subscale scores for each source of support ranged from 4-20 and total score ranged from 12-60. A high score indicated a high level of social support.

Marital satisfaction was measured by Couple Satisfaction Scale (CSS: Olson & Larson, 2008). It is 10 items self-report questionnaire that assessed level of satisfaction with certain aspects of marriage. The items were measured by 5 point Likert scale. Total score range from 10-50, where higher score indicated higher level of marital satisfaction.

Self-esteem was measured by Rosenberg Self-Esteem Scale (RSES: Rosenberg, 1965). It consists of 10 items with 4 point Likert scale. Score ranged from 0 to 30, with higher score indicating higher levels of self-esteem. Content and construct validity as well as reliability of the RSES have been previously established with its internal consistency coefficient of .83 (Hatcher & Hall, 2009).

The reliability of these five questionnaires was tested before the actual study was conducted with 30 postpartum mothers who have same characteristics with sample in this study. The results showed acceptable Cronbach's alpha coefficient of these five questionnaires EPDS, CSI, PDPI-R, CSS, and RSES were 0.75, 0.83, 0.94, 0.77, 0.76, respectively.

Ethical consideration

This study was approved by the Institutional Review Board, Faculty of Nursing, Burapha University. After that, permission was sought from directors of 4 communal health centers located in Hai Phong city. The eligible participants signed the consent formed prior collecting data.

Data collection procedure

On the data collection days the researcher obtained the list of names of postpartum women who met the study's inclusion criteria. Postpartum mothers were contacted at the time they waiting for their baby immunization order. The researcher and research assistants explained their rights to participate and assured that collected data would be processed anonymously; all of information from the questionnaires were treated confidentially and only used for the purposes of the research. Mothers not wanting to answer according to purposes of this study could be withdrawn from the study at any time. Then, if they decided to take part in the study voluntarily, mothers signed a consent form and read and filled out a self-report questionnaire.

Data analyses

The collected data was analyzed using the SPSS 17.0 program. For general characteristics and postpartum depression, childcare stress, social support, marital satisfaction, and self-esteem of subjects, frequency and percentages, mean and standard deviation were calculated. Standard multiple regression was conducted to determine the influencing factors of PPD of subjects

Results

1. The general characteristics of sample

As shown in Table 1, the mean age of participants was 29.04 years (SD = 4.49, Range = 20-42). Most of subjects were married (n = 106, 98.1 %). Around three-fifths were employed by the government or a private company (n = 65, 60.2%)

while nearly 30% of subjects were housewives (n = 32). Two-thirds of participants had completed college or higher form of education (n = 72, 66.7%). The majority of samples had family income more than 3.000.000 Vietnamese Dong per month (89.9%). Regarding obstetric characteristics, this study found that 48.1% were first time mothers. Nearly 23 percent of mothers (n = 25) reported a caesarean birth. Slightly over a half (n = 56, 51.9%) gave birth to a male infant. Mean birth weight of all infants was 3194.4 g (SD = 361.4; range 2300-4200 g) (see Table 1).

Table 1 Characteristics of sample (N = 108)

Socio-demographic and Obstetric characteristics	**Frequency**	**Percent (%)**
Maternal age (years) (M = 29.04, SD = 4.49, Range = 20-42)		
Marital status		
Married	106	98.1
Other (Widowed/ Divorced/ Separated/ Single)	2	1.9
Education		
Primary school (Class 1-5)	2	1.8
Secondary school (Class 6-9)	12	11.1
High school (Class 10-12)	22	20.4
Higher education (College, Bachelor degree or higher)	72	66.7
Employment status		
Employee for private company	35	32.4
Housewife	32	29.6
Employee for government	30	27.8
Private Business	7	6.5
Unemployed	4	3.7
Family income (VND/ month)		
≤ 3.000.000	12	11.1
3.000.001-6.000.000	51	47.2
6.000.001-10.000.000	32	29.6
≥ 10.000.001	13	12.1
Parity		
Nulliparous	52	48.1
Multiparous	55	50.9
Mode of delivery		
Normal vaginal birth	83	76.9
Cesarean Section	25	23.1

Table 1 Characteristics of sample (N = 108) (continue)

Socio-demographic and Obstetric characteristics	Frequency	Percent (%)
Baby gender		
Male	56	51.9
Female	52	48.1
Infant birth weight (gram) (M = 3194.4, SD = 361.4, Range 2300-4200)		

2. Prevalence of postpartum depression

The average score of EPDS was 9.06 (SD = 3.93; range = 0-17). The prevalence of probable PPD was 21.3% (EPDS ≥ 13).

3. Factors predicting postpartum depression

An analysis to examine factors that predicting PPD of mothers was conducted by standard multiple regression with childcare stress, social support, marital satisfaction, self-esteem designated as independent variables. Before performing the multiple regression analysis, multicollinearity among the independent variables was assessed. As a result of multicollinearity test, highest correlation between independent variables was 0.55, less than 0.85 and the range of tolerance was verified as 0.86 to 0.93 more than criteria of 0.1. Variation inflation factor (VIF) was 1.07 to 1.21 not exceeding the standard 10 indicating that assumption of multicollinearity was not violated.

Through multiple regression analysis, the influencing factor on PPD of subjects was checked. As shown in Table 3, four variables in the model including childcare stress, social support, marital satisfaction, and self-esteem could predict 55.6% of PPD (R^2 = .556, F [4,103] = 32.30, p < .001). The best predictor of PPD was childcare stress (β = .36, p < .001).

Table 3 Factors predicting postpartum depression

Predictors	B	SE	β	t	P-value
Childcare stress	.36	.07	.36	5.00	.000
Social support	-.12	.03	-.29	-4.07	.000
Marital satisfaction	-.21	.06	-.27	-3.77	.000
Self-esteem	-.24	.08	-.20	-2.99	.003
Constant = 22.87					
R^2 = .556					
Adjusted R^2 = .539					
F (4,103) = 32.30					

Discussions

The first purpose of this study was to determine prevalence of PPD among women in Vietnam. The present study applied the recommended cut-off score of 13 (or above) for detecting probable depression amongst postpartum women. The results revealed that prevalence of mothers who reported a EPDS score of 13 or more was 21.3% (n = 23). It is slightly higher than that reported in central Vietnam with 18.1% (Murray, 2012). This result is also comparable to a previous study in Ho Chi Minh City which reported a higher prevalence of 33% using the same EPDS scale (Fisher et al., 2004). However, that study did not use the same criteria as this study. They included all participants and included those may comprise the socially disadvantaged groups such as adolescent mothers or mother with preterm delivery, twins or trigeminal mothers. These groups had previously been found to have rates of PPD reaching to 40-60% (Earls, 2010). The prevalence of PPD in this study is higher than that reported by O'Hara and Swain (1996) in Western countries, where the mean prevalence of PPD was 14%. This prevalence is similar to mean prevalence in Asian countries of 21.8% (Roomruangwong & Epperson, 2011). The high prevalence of PPD in Vietnam may be explained by Vietnamese social context that views depression during motherhood as predominantly somatosocial in nature and the mothers assigned a strong personal responsibility for care. Psychiatric treatment and care was seldom recommended (Anne, 2003; Patel et al., 2010).

In this study, childcare stress was a strongest explaining factor on PPD (β = .36, p < .001). Increase childcare stress could therefore increase the chances for PPD. It could be explained that women who transition to motherhood experience various physical and psychological changes following childbirth while assuming the responsibility of taking care of the newborn. Therefore, they easily become stressed by demands or problems of their babies. Especially, first time mothers who account nearly a half of participants in this study may be easy to become stress by childcare demands because lack of experience and knowledge to childcare. That stressful events associated with the care a newborn baby related to PPD is consistent with findings of Beck (2001). Leung (2001) also indicated that childcare stress was strongly positively correlated with PPD (r = .58, p < .001) and independently predicts 7% of the variance in PPD. Findings of this study are also similar to a study in Korea that found childcare stress could account for 49% of PPD (β = .45, p < .001) (Ju-Eun, 2009). Findings of this study suggest that nurses and midwives need to promote knowledge and skills of newborn care to mothers as a buffer on childcare stress to reduce PPD.

Social support was also verified as an important predictor of PPD (β = -.29, p < .001). It could be seen that social support plays an important role in maternal well-being. Increased social support help reduce level of PPD. In Vietnamese culture, 98% women married, most postpartum women received support from family members, such as spouse, parents, children, etc, in order to share childcare work, reduce stress and increase mental health (Harpham & Tuan, 2006). Social support was found to reduce level of maladaptation, and prevents unfortunate consequences

due to life transitions and challenges such as in the postpartum period (Tsao, 2007). This finding supported the postpartum depression theory of Beck (2001) and results of numerous studies over past decades which indicated that lower levels of social support were related to higher postpartum depressive symtomatology (Boyce & Hickey, 2005; Heh et al., 2004; Xie et al., 2009). Similarly, Leung, and Martinson (2005) revealed that social support could explain 56% of the variance in PPD. Therefore, health care providers, particularly nurses and midwives need to be aware of the importance of social support and fostering to promote support from mothes'social networks, such as husband, family, friends in order to improve women mental health and well-being after childbirth.

From the findings of this study, marital satisfaction was a significantly predictor of PPD (β = -.27, p < .001). In the traditional Vietnamese culture, after marriage, a woman move to live with her husband's family. Therefore, after delivery, a woman would receive support from her husband's family members. If she received love, mutual sharing and guidance from husband and family members in the difficult time of motherhood then women are able to manage stresses. In contrast, if they experience marital conflict, poor relationship with husband or family members, then their satisfaction with marriage is low thus it could be a chance that they become vulnerable to depression. Moreover, poor-quality relationships were found more likely to suffer from PPD (Boyce & Hickey, 2005). The findings of this study are similar to a recent study in Pakistan that found marital satisfaction was negatively correlated with PPD (r = -.75, p < .001) (Munaff & Siddiqui, 2013). That marital dissatisfaction was associated with increased risk for PPD also is consistent with finding of Beck (2001) in Postpartum Depression Theory and previous studies (Lee et al., 2004; Siu, Leung, Ip, Hung, & O'Hara; 2012).

Finally, self-esteem was found to have a significantly negative correlation with PPD and could predict PPD (β = -.20, p < .001). It could be assumed that women with low self-esteem are more likely to experience PPD. Study of Wang and Ollendick (2001) revealed that people from traditional collectivist cultures such as Vietnam or China tend to demonstrate lower levels of self-esteem than people from individualist cultures such as United State. Self-esteem was found significantly associated with personal satisfaction and effective functioning. "It results from the knowledge that is fulfilling one's social role with grace and dignity, and meeting expectation" (Wang et al, 2003). The results of this study corresponded with that of Beck (2001) and previous studies (Chen, 2001; Wang et al., 2003) that found self-esteem was a significant predictor of postpartum depression. It is suggested that health care providers should create interventions that increase maternal self-esteem.

Implementation and recommendation

This study showed high rate of PPD in Ngo Quyen district, Hai Phong city, Vietnam. Therefore, it is necessary that nurses and midwives who take care of women in early postpartum period should screen all women who attend postpartum check up clinics to early detect and establish appropriate prevention of

PPD. As a result, PPD rate could be reduced. Early screening also helps to find women who suffer from PPD in order to provide timely care and treatment.

The predictors of PPD in this study should be applied as part of interventions which focus on reducing childcare stress by providing knowledge of baby care, improving social support, increasing marital satisfaction and enhancing self-esteem. Further studies are needed to develop such interventions and verify their effects.

Conclusion

Findings of this study indicated that the prevalence of PPD is significantly high in Vietnam. PPD is significantly predicted by childcare stress, social support, marital satisfaction, and self-esteem. Therefore from these results, it is concluded that nursing interventions for reducing PPD should focus on early detecting of PPD and modifying predicting factors of PPD.

References

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Anne, N. (2003). Cultural and social attitudes towards mental illness in Ho Chi Minh City, Vietnam. *Stanford Undergraduate Research Journal, 2*, 27-31.

Beck, C. T. (1993). Teetering on the edge: A substantive theory of postpartum depression. *Nursing Research, 42*(1), 42-48.

Beck, C. T. (2001). Predictors of postpartum depression: An update. *Nursing Research, 50*, 275-285.

Beck, C. T. (2002b). Revision of the postpartum depression predictors inventory. *Journal of Obstetric, Gynecologic & Neonatal Nursing, 31*, 394-402.

Beck, C. T. (2002c). *Postpartum depression screening scale*. Los Angeles: Western Psychological Services.

Boyce, P., & Hickey, A. (2005). Psychosocial risk factors to major depression after childbirth. *Social Psychiatry and Psychiatric Epidemiology, 40*, 605-612.

Cox, J. L., Holden, J. M., & Sagovsky, R. (1987). Detection of postnatal depression Development of the 10-items Edinburgh postnatal depression scale. *British Journal of Psychiatry,* 150, 782-786.

Cutrona, C. E. (1984). Social support and stress in the transition to parenthood. *Journal of Abnormal Psychology, 93*, 378-390.

Earls, M. F. (2010). Clinical report incorporating recognition and management of perinatal and postpartum depression into pediatric practice. *Pediatrics, 126*, 1032-1039.

Eastwood, J. G., Jalaludin, B. B., Kemp, L. A., Phung, H. N., & Barnett, B. E. (2012). Relationship of postnatal depressive symptoms to infant temperament, maternal expectations, social support and other potential risk factors: Findings from a large Australian cross-sectional study. *BMC Pregnancy and Childbirth, 12*(148), 1-10.

Fisher, J., Morrow, M., Nhu Ngoc, N., & Hoang Anh, L. (2004). Prevalence, nature, severity and correlates of postpartum depressive symptoms in Vietnam. BJOG: *An International Journal of Obstetrics and Gynaecology, 111*, 1353-1360.

Gaillard, A., Le Strat, Y., Mandelbrot, L., Keïta, H., & Dubertret, C. (2013). Predictors of postpartum depression: Prospective study of 264 women followed during pregnancy and postpartum. *Psychiatry Research, 215*, 341-346.

Harpham, T., & Tuan, T. (2006). From research evidence to policy: Mental health care in Viet Nam. *Bulletin of the World Health Organization, 84*, 664-668.

Hatcher, J., & Hall, L. A. (2009). Psychometric properties of the Rosenberg self esteem scale in African American mothers. *Issues in Mental Health Nursing*, *30*, 70-77.

Heh, S. S., Coombesb, L., & Bartlettc, H. (2004). The association between depressive symptoms and social support in Taiwanese women during the month. Internationa *Journal of Nursing Studies, 41*, 573-579.

Ju-Eun, S. (2009). Influencing factors of postpartum depression between 4 to 6 weeks after childbirth in the postpartum women. *Korean Journal of Women Health Nursing*, 15, 216-223.

Leahy-Warren, P., & McCarthy, G. (2007). Postnatal depression: Prevalence, mothers' perspectives, and treatments. *Archives of Psychiatric Nursing, 21*, 91-100.

Lee, D. T. S., Yip, A. S. K., Leung, T. Y. S., & Chung, T. K. H. (2004). Ethnoepidemiology of postnatal depression: Prospective multivariate study of sociocultural risk factors in a Chinese population in Hong Kong. *British Journal of Psychiatry, 184*, 34-40.

Leung, S. S. K. (2001). *Postpartum Depression: Perceived social support and stress among Hong Kong Chinese women.* Doctoral dissertation, Hong Kong Polytechnic University.

Leung, S. S., & Martinson, I. M. (2005). Postpartum depression and related psychosocial variables in Hong Kong Chinese women: Findings from a prospective study. *Research in Nursing and Health, 28*(1), 27-38.

Maeve, M. K. (2006). Postpartum depression theory. In M. R. Alligood & A. M. Tomey (Eds.), *Nursing theorist and their work* (7th ed., pp. 722-740). Maryland Heights, MO: Mosby.

McEwen, M., & Wills, E. M. (2007). *Theoretical basis for nursing* (3rd ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

Munaf, S., & Siddiqui, B. (2013). Relationship of post-natal depression with life and marital satisfaction and its comparison in joint and nuclear family system. *Social and Behavioral Sciences, 84*, 733-738.

Murray, L. J. (2012). *Postnatal depression in Central Vietnam*. Doctoral dissertation, Queensland University of Technology.

O'Hara, M., & Swain, A. (1996). Rates and risk of postpartum depression-a meta-analysis. *International Review of Psychiatry*, *8*, 37-54.

Olson, D. H., & Larson, P. J. (2008). *PREPARE/ ENRICH: Customized version*. Minneapolis, MN: Life Innovations.

Patel, V. et al. (2010). The social contexts of depression during motherhood: A study of explanatory models in Vietnam. *Journal of Affective Disorders*, *124*(1-2), 29-37.

Patel, V., Rahman, A., Jacob, K. S., & Hughes, M. (2004). Effect of maternal mental health on infant growth in low-income countries new evidence from South Asia. *British Medical Journal*, *328*, 820-823.

Roomruangwong, C., & Epperson, C. N. (2011). Perinatal depression in Asian women: Prevalence, associated factors, and cultural aspects. *Asian Biomedicine*, *5*, 179-193.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Siu, B. W., Leung, S. S., Ip, P., Hung, S. F., & O'Hara, M. W. (2012). Antenatal risk factors for postnatal depression: A prospective study of Chinese women at maternal and child health centres. *BMC Psychiatry, 12*(22), 1-9.

Thach, D. T., Tuan, T., Buoi, L., Lee, D., Rosenthal, D., & Fisher, J. (2011). Screening for perinatal common mental disorders in women in the north of Vietnam: A comparison of three psychometric instruments. *Journal of Affective Disorders*, *133*, 281-293.

Tsao, Y. (2007). *Emotional well-being of childbearing women: A comparison of nationals and foreign brides in Taiwan*. Doctoral dissertation, Griffith University.

Tsivos, Z., Wittkowski, A., Calam, R., & Sanders, M. (2011, June) Postnatal depression – the impact for women and children and interventions to enhance the mother-infant relationship. [Online]. Perspective-NCT's Journal on Preparing Parents for Birth and Early Parenthood. Retrieved from https://www.nct.org.uk/sites/default/files/related_ documents/Tsivos%20et%20al.%20 Postnatal%20depression%2016-20.pdf

Wang, S. Y., Jiang, X. Y., Jan, W. C., & Chen, C. H. (2003). A comparative study of postnatal depression and its predictors in Taiwan and mainland China. *American Journal of Obstetrics and Gynecology*, *18*, 1407-1412.

Wang, Y., & Ollendick, TH. (2001). A cross-cultural and delopmental analysis of self-esteem in Chinese and Western children. *Clinical Child and Family Psychology Review*, 4(3), 253-271.

Xie, R. H., He, G., Koszycki, D., Walker, M., & Wen, S. W. (2009). Prenatal social support, postnatal social support, and postpartum depression. *Annals of Epidemiology*, *19*, 637-643.