



PATERNAL POSTPARTUM DEPRESSION: A CONCEPT ANALYSIS

Irma Nurbaeti

PhD student, Faculty of Nursing, Burapha University Thailand, Maternity Nursing Dept. School of Nursing, SIUSyarif Hidayatullah, Jakarta, Indonesia

ABSTRACT

Paternal postpartum depression is a relatively unrecognized phenomenon in nursing tends to increasing gender functions shift and paternal involvement in childcare. Paternal postpartum depression refers to unhappy or sad is experienced by father following childbirth, despite of onset of paternal depression not exactly understood. Antecedence factors include hormonal, neuroticism, personal history of depression, depression in couple, marital satisfaction, life events and social support. Effect of paternal postpartum depression may be on his self, father – infant interaction and couple relationship. Paternal postpartum depression is measured in same ways that maternal postpartum depression has been measured. Such as the Schedule of Affective Disorders and Schizophrenia (SADS), the Structured Clinical Interview for DSM-II-R (SCID), The self report measures most commonly used for determining depression status were the Edinburgh Postnatal Depression Scale (EPDS), Beck Depression Inventory (BDI), General Health Questionnaire (GHQ) and the Center for Epidemiological Studies-Depression (CES-D). The possible differences in how men and women express emotional distress need to be acknowledged, thus specific instruments for assessing the dimensions of men's depression need to be developed.

© 2014 Pak Publishing Group. All Rights Reserved.

KEYWORDS: Paternal, Postpartum depression, Nursing, Attribute, Antecedence, Concept.

INTRODUCTION

Increasing gender functions change and paternal participation in childcare becomes the norm, the experience of having a child is seen as requiring major adjustments for men as well as women. The negative possibilities of aspects for men of having a child have been little discussed, although the positive are beginning to be recognized. The emotional life of fathers after the birth of a child has been arguably overlooked, leaving paternal postpartum depression a relatively unrecognized phenomenon. Historically, paternal postpartum depression phenomenon has started since 1981 (Zaslow *et al.*, 1985). After that, some researchers have been doing research and investigating prevalence, risk factors and influence of paternal postpartum depression toward baby and maternal.

Many authors have identified the need to assess paternal postpartum depression, describing a variety of antecedence associated with its relationship to paternal postpartum depression and link to maternal and baby conditions. According to Ferketich and Mercer (1989) intervention that increases parental competence and the individual's sense of mastery or could would have a direct effect on anxiety and depression. Efforts may be directed in helping families plan for extra help during the period of the wife's hospitalization, and for having help available at other times.

CONCEPT ANALYSIS

Walker and Avant (2011) defined concept as the basic building blocks in theory construction. Concept analysis is a process that identifies unique attributes of a concept, provides a precise operational definition of the concept, and improves communication regarding the concept. Walker and Avant suggested that concept analysis can provide an excellent beginning for the validity construction that reflect theoretical base. Thus, the result of concept analysis may also be used as variables for the purposes of research when defined operationally (Walker and Avant, 2011). Furthermore, the purpose of this analysis is to identify structure and function of the concept

paternal postpartum depression. This article will describe an analysis of concept paternal postpartum depression through the use of Walker and Avant model.

The nursing research database (PubMed, CINAHL, PsychInfo, and MedLine) were searched using the keywords paternal, postpartum depression, postnatal depression, prevalence/evidence, influence/effect, or factors. The search conducted was for article between 1996 and 2010. The result data base consisted of 20 publication from following disciplines; psychology, psychiatry and nursing. These selected publications were a combination of conceptual, qualitative and quantitative research. Additional literature from the reference citations included in these articles was reviewed. Articles were selected according to whether the concept of paternal postpartum depression was defined or described and whether characteristic for paternal depression postpartum were suggested. The theoretical literature was examined in terms of its current utility in reflecting the concept. Thus, the data were examined for clusters of recurring phenomena, using a form of concept analysis.

REVIEW OF THE LITERATURE

Concept of postpartum depression in nursing first time has been announced by Cheryl Tatano Beck. Beck tends to the importance of understanding pregnancy, birth, and motherhood through “the eyes of women” (Beck, 2002). Postpartum depression defines as a non-psychotic major depressive disorder with distinguishing diagnostic criteria that often begins as early as 4 weeks after birth. It may also occur anytime within the first year after childbirth (Beck, 1996). In the Diagnostic Statistic manual of Mental Disorder, fourth edition, Text Revision (DSM-IV-TR) postpartum depression requires an onset within four weeks following childbirth and is nor recognized as an entirely distinct major depressed episode, although a postpartum onset specifier may be added (American Psychiatric Association, 2000). The American Psychological Association describes postpartum depression as a “serious mental health problem characterized by a prolonged period of emotional disturbance, occurring at a time of major life change” (American Psychiatric Association, 2000).

Paternal postpartum depression refers to depressed is experienced by father following childbirth (Areias *et al.*, 1996; Dwenda Gjerdingen and Bruce, 2003; Botorowicz and Petrycka, 2006; Paulson and Bazemore, 2010; Paulson *et al.*, 2011). When onset of paternal depression not exactly understood. Matthey *et al.* (2000) found that depression in men begins later, often following the onset of depression in women, with the rate in fathers increasing over the first year. The others author supported that unlike mothers, in whom the onset of postpartum depression is usually in the early postpartum period, depression in father came after (Hendrick *et al.*, 2000).

For getting a clear concept of paternal, according to Merriam-Webster Dictionary paternal is relating to a father, like that of a father <paternal benevolence>; received or inherited from one's male parent, and related through one's father <paternal grandfather> (<http://www.merriam-webster.com/dictionary>, download January, 21,2014). Phares (1996)stated father as the role of the any number of male individuals, such as the biological father (who may or may not live with the child). In this term father relates with biological father.

The concept of paternal postpartum depression has been used to describe prevalence (Paulson *et al.*, 2006; Ling-ling *et al.*, 2009), characteristics of partner and fathers (Gjerdingen and Center, 2003; Paulson and Bazemore, 2010) and its influence to family (Goodman, 2004; Ramchandani *et al.*, 2005; Paulson *et al.*, 2006). However, the structure of concept of paternal postpartum depression not really emerged. To conceptually refine paternal postpartum depression, the literatures were examined according to Walker and Avant (2011) approach to concept analysis. Defining attributes, Antecedent and consequences of paternal postpartum depression and model case are described. Fig. 1 illustrates antecedents, defining attributes and consequences of paternal postpartum depression schematically.

DEFINING ATTRIBUTES OF PATERNAL POSTPARTUM DEPRESSION

There are many definition of attributes. For instance, Walker and Avant (2011) described defining attributes as the heart of concept analysis, characteristics of a concept most frequently

associated with it and which help differentiate the occurrence of a specific concept from a similar or related concept. A review of the literature resulted in the identification of many characteristics associated with paternal postpartum depression, including baby care difficulties, somatic symptoms, psychological symptom or mood disorder, social symptoms, and psychobehavioral retardation.

Baby care difficulties refers to hard to provide caring for the infant, not easy to be a responsive parents, more irritable and less patient with the baby (Dwenda Gjerdingen and Bruce, 2003; Goodman, 2004; Botorowicz and Petrycka, 2006; Davey *et al.*, 2006; American Psychiatric Association, 2007).

Somatic symptoms as characteristics of paternal postpartum depression including headaches, muscleaches, stomach/digestion problems, fatigue and changes in sleep or appetite (Neff, 2010) and a reduction in the ability to function in daily life (American Psychiatric Association, 2007).

Psychomatic symptoms or a mood disorder refers to “sad dad” (Neff, 2010) associated with fatigue, cognitive impairment, loss of interest and motivation, makes it difficult to be a responsive parents (Dwenda Gjerdingen and Bruce, 2003; Goodman, 2004; Botorowicz and Petrycka, 2006; Paulson and Bazemore, 2010; Paulson *et al.*, 2011). Furthermore, including irritability, low motivation, poor concentration (Neff, 2010), anxiety, guilt, fear and loss of pleasure in previously enjoyed activities (American Psychiatric Association, 2007)

Social symptoms reflect to relationship features with couple, family, friends or significant others including isolating or withdrawing from relationships, and isolation from family and friends (American Psychiatric Association, 2007).

Finally, psychobehavioral symptoms tend to both thought and behaviour disorder, including impulsivity, risk-taking behaviour often turning to substances (alcohol, prescription drugs, cigarette) (Neff, 2010), thoughts of hurting oneself or the child; and suicidal thoughts (American Psychiatric Association, 2007).

PATERNAL POSTPARTUM DEPRESSION CASE

Walker and Avant (2011) suggested identifying a model case that demonstrates all the defining attributes of a concept. Based upon the suggested definition and attributes, the following is an invented model case : Thomas (26 years old) and Anna (18 years old) have already had first baby girl, 6 month years old. Since her wife have felt down and exhausted to “mad” or “abnormal”, he felt down too. He feels “unhappy” as naturally, more irritable, and poor concentration to do anything. He feels guilty because he can’t take care his baby, become a lot more irritable and less patient with his kid, and feel angry when his baby cries. His appetite is poor, stomach problem come up, increased fatigue and weakness. He had been difficult to communicate with his wife, they argued over and over about same things, again and again. He experienced the enormous sense of frustration in dealing with the problems. He said that he was at loss to know what to do. When his wife was angry, he went to night bar, drinking alcohol and smoking a lot but he feels alone among his friends.

BORDERLINE, RELATED AND CONTRARY CASE

Walker and Avant (2011) stated a borderline case that contains most, but not all the attributes, related cases that are instances of concepts related to the concept being studied, and contrary cases that are clear examples of instances that are not the concept.

Borderline case described problem with his self, and couple interaction. Borderline case can be explicated by case Tom (28 years old) and Susan (20 years old) who have baby 8 month years old. First time after her wife delivery baby, he felt happy, but later he could not enough sleep every night and felt fatigue, poor concentration at work place, and low motivation to do daily life. He joined with his friends to spend time until midnight but he didn’t drink alcohol or smoke just talked. He don’t want to see his wife, because they always dispute each other when discuss something. He tried to sing a song and played peek – a – boo with his kid, interactive with happiness to his kid but he felt not comfort.

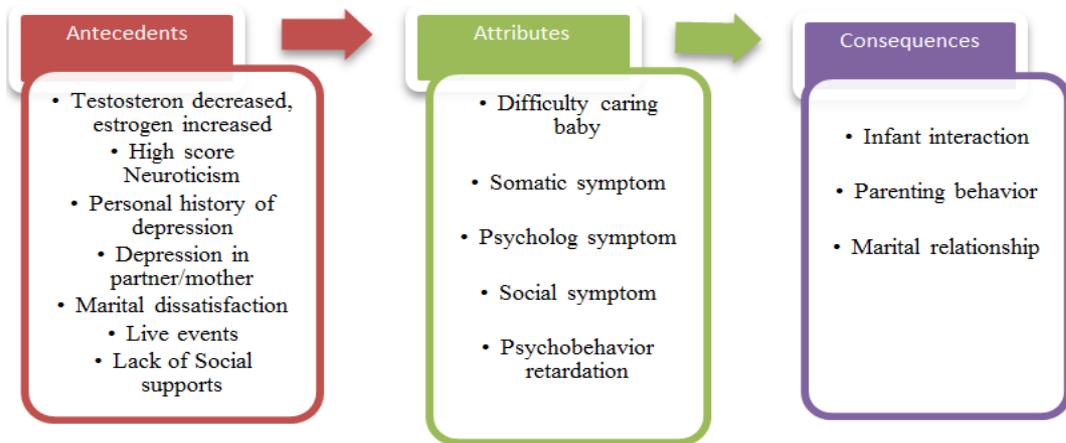


Figure-1. Paternal postpartum depression concept diagram

The related case may be elucidated by case James (25 years old) just had a first baby seven days ago. His wife had a complication following childbirth, and he have to take care of their baby by his self. He felt fatigue, loss appetite and experience sleep disturbance because should take care of the baby along night. He was angry easily and become irritable at early day following childbirth. He tried to adjust with new his living and learn how to take care the baby. He talks to his friends and they share experienced how to care of a kid, and communicate with the spouse.

Another example show contrary case that not the concept of paternal postpartum depression. Sam (30 years old) and Sarah (26 years old) whom have had a baby boy, age 7 months. They care of the baby together. Sam feels excited and very happy. He plays with the baby and sings his songs. He knows that family financial will increase, get he is motivated to work hard to provide for his family. He feels that his life completed with the lifespan of his baby.

ANTECEDENTS AND CONSEQUENCES OF PATERNAL POSTPARTUM DEPRESSION

Antecedents and consequences are events or incidents that are not defining attributes but that occur prior to or following the occurrence of the concept (Walker and Avant, 2011). Several of the characteristics identified may be antecedent to the paternal postpartum depression. These are hormonal : decreasing testosterone levels and increasing estrogene levels (Hendrick *et al.*, 2000; Swaab *et al.*, 2005), neuroticism (Matthey *et al.*, 2000; Dudley *et al.*, 2001), personal history of depression (Goodman, 2004), depression in partner/mother (Lee, 1997; Goodman, 2004; Bielawska-Batorowicz and Kossakowska-Petrycka, 2006; Goodman, 2008; Paulson and Bazemore, 2010; Paulson *et al.*, 2011), marital satisfaction (Goodman, 2004; Bielawska-Batorowicz and Kossakowska-Petrycka, 2006), life events (Lee, 1997; Tychev, 2007; Gao *et al.*, 2009) and social support (Bielawska-Batorowicz and Kossakowska-Petrycka, 2006).

Sex hormones play an important role in depressed fathers. Storey *et al.* (2000) stated that testosterone levels go down and estrogene levels go up are associated with depression in men after baby birth. In addition, plasma levels of estrogene are usually lower and plasma levels of androgens are increased among depressed women, while testosterone levels are decreased in depressed men. Furthermore, Swaab *et al.* (2005) have supported this statement. They said that the stress system is affected by changing levels of sex hormones. Corticotropine-releasing hormone (CRH) plays a central role in the regulation of the hypothalamic-pituitary-adrenal (HPA)-axis, i.e., the final common pathway in the stress response. This is explained by the fact that both in depressed males and females the HPA-axis is increased in activity, parallel to a diminished HPG-axis, while the major source of androgens in women is the adrenal, whereas in men it is the testes.

High score in neuroticism associated with paternal postpartum depression. Neuroticism is the tendency to be in a negative state for long periods of time. It is a fundamental personality trait in the study of psychology characterized by anxiety, moodiness, worry, envy, and jealousy

(Thompson, 2008). Individuals who have a high score on neuroticism are more likely than the average to experience such feelings as anxiety, anger, envy, guilt, and depressed mood, and they experience these feelings more strongly than those who score lower on neuroticism (Matthews and Deary, 1998). They are sensitive and respond poorly to all types of stressors, are more likely to interpret ordinary situations as threatening, and minor frustrations as hopelessly difficult and problematic. They are often self-conscious, worrisome, success-driven and shy, and they may have trouble controlling urges and delaying gratification. They typically care about how others perceive them and want to be liked by everyone. Neuroticism is a risk factor for the “internalizing” mental disorders such as phobia, depression, panic disorder, and other anxiety disorders, all of which are traditionally called neuroses. Individuals who high in neuroticism tend to internalize these neuroses because they are highly self-conscious and want to be viewed as perfect. (Hettema, 2006). Neuroticism and paternal postpartum depression still controversy because Matthey *et al.* (2000) and Dudley *et al.* (2001) said that neuroticism has contributing to paternal postpartum depression; but in contrast, Botorowicz and Petrycka (2006) found that neuroticism was not significant correlated with paternal postpartum depression.

History of personal depression has contribution to paternal postpartum depression. Harvey and McGrath (1988) cited in Goodman (2003) reported 42% of men who have psychiatric morbidity experienced depression during partners' stayed at hospital after baby birth. The main diagnoses were major depressive disorder and generalized anxiety disorder. Half of them had onset during partner' pregnancy and half during their couples postpartum.

Mother's or couple's depression in pregnancy and postpartum is also as an important antecedent in paternal postpartum depression. Some researchers found the strongest and moderate correlation between depressed father and mother. According to Raskin *et al.* (1990) 22% of new fathers had dysphoria mood in the eight month after delivery. Another study shows that 30% of male respondents are characterized by a high level of postnatal depression (Cowan *et al.*, 1991). Ballard *et al.* (1994) indicated that three out of 10 examined men were depressed in 6 weeks after childbirth, their depression escalated during the next 6 months. Ballard and Davies (1996) estimated that approximately 10% of the male population is suffering from postpartum. This phenomenon has significant correlation between maternal PPD (Lee, 1997; Goodman, 2004; Bielawska-Batorowicz and Kossakowska-Petrycka, 2006; Goodman, 2008; Paulson and Bazemore, 2010; Paulson *et al.*, 2011). Although a limited number of studies have addresses the phenomenon, it can explain that as the couple adjusts to new parenthood, and any impact of biological factors decreases in the woman, the factors of partner support and adaptation are more likely to impact on mood. When new mothers were severely depressed, the rate of partner depression increased significantly. However, it is unclear what the causal relationship is between postpartum depression in men and women, but they depression are clearly linked. The correlation between mothers' and fathers' depressive symptoms may be because of one person's psychological state influencing the others. Family members have daily effects on each other's emotion and depression in one partner reduces happiness and exhilaration in the other (Goodman, 2004).

Marital dissatisfaction related with paternal postpartum depression may persist and even increase throughout the first year, even when the level of depression decrease. This indicating that the difficulties experienced by fathers with postpartum depression and their partners may be long lasting, with deterioration over time (Milgrom and McCloud, 1996). The degree of satisfaction with a marital relationship is assessed and includes how happy or satisfied the woman is with certain aspects of her marriage, such as communication, affection, similarity of values (e.g., finances, child care), mutual activity and decision making, and global well-being.

Major life events, particularly those involving the partner or close family, have been shown to increase the risk of postpartum depression in several culture. Childbirth itself is a life-event which requires major readjustments (Ruchala and Halstead, 1994). The number of life experiences and the amount of stress created by each of the life events are combined to determine the amount of life stress. Stressful life events can be either negative or positive and can include experiences. A change in financial status, a change in role, and a change in marital relationship faced by new parents. Fathers with less financial resources were more depressed (Bielawska-Batorowicz and Kossakowska-Petrycka, 2006). In some culture having baby gender not as expectation or hope as a live event that can induce stress. For instance in Asia (China, Japan, and India), Africa (Nigeria)

and Turkey had a girl is highly related to postpartum depression (Tychey, 2007; Ling-ling *et al.*, 2009).

Social support plays an important role in buffering the effect of life-events and stressors. particularly, support from the partner both during and after pregnancy, is associated with reduced risk of postpartum depression. For new fathers all tasks related to childbirth and childcare are unfamiliar and might become difficult. In such circumstances a father look for support from the most obvious source of support – his partner. However, when this primary source of support is depressed and the amount of support received by men might not be satisfactory, might affect men's physical and emotional well-being (Bielawska-Batorowicz and Kossakowska-Petrycka, 2006). In addition, study by Gao *et al.* (2009) found that perceived social support had a significant correlation with depression.

Consequences are the “events that occur as a result of the occurrence of the concept” (Walker and Avant, 2011). As an impact of paternal postpartum depression, Goodman (2008) stated that father's less optimal interaction with their infants. Although the mother – infant interaction and the father – infant interaction were not significantly related to each other, maternal and paternal emotions related to the infant were, and this emotional transmission was somehow played out in fathers' interaction with their infants. Paulson *et al.* (2006) studied parenting behaviour of paternal postpartum depression, found that paternal depression engages in less positive interaction with their children, with a particular reduction in the degree of enrichment interaction, including reading, telling stories, and singing songs. Another effect of paternal postpartum depression is poor marital relationship. Men whose partners were depressed and become depressed, stayed in more conflicting relationships and experienced more problems with childcare (Bielawska-Batorowicz and Kossakowska-Petrycka, 2006).

EMPIRICAL REFERENTS

The last stage of concept analysis is empirical referents. Empirical referents are “classes or categories of actual phenomena that by their existence or presence demonstrate the occurrence of concept itself” (Walker and Avant, 2011). Empirical referents are used to measure the concept. Numerous empirical referents for the attributes of postpartum depression have been reported in the literature, paternal postpartum depression was measured in same ways that maternal postpartum depression has been measured. The current research standard for a depression diagnosis is to use a structured interview, such as the Schedule of Affective Disorders and Schizophrenia (SADS) (Endicott and Spitzer, 1978) and the Structured Clinical Interview for DSM-II-R (SCID) (Spitzer *et al.*) to achieve a clinical diagnosis. The self report measures most commonly used for determining depression status were the Edinburgh Postnatal Depression Scale (EPDS), Beck Depression Inventory (BDI), General Health Questionnaire (GHQ) and the Center for Epidemiological Studies-Depression (CES-D) (Radloff, 1977).

Finally, the possible differences in how men and women express emotional distress need to be acknowledged, thus specific instruments for assessing the dimensions of men's depression need to be developed.

SUMMARY

The concept development process is an important part of the generation of nursing knowledge. This will ultimately be valuable as nurses continue to build an evidence-based practice. Paternal postpartum depression concept indicate a need for further understanding of the reciprocal influences between mothers, fathers and infants. It is a concept that influences how nurse understand the phenomena, studies that include postpartum families and couples, families of various ethnic, cultural and socioeconomic status background. The attributes of paternal postpartum more fully understand. It is an important concept in research and practice, useful for further nursing research, and nursing practice.

REFERENCES

- American Psychiatric Association, 2000. Diagnostic and statistical manual of mental disorders. Washington, DC: American Psychiatric Association.
- American Psychiatric Association, 2007. Stress a major health problem in the U.S., Warns APA. Washington, DC: American Psychiatric Association.
- Areias, M., R. Kumar, H. Barros and E. Figueiredo, 1996. Correlates of postnatal depression in mothers and fathers. *J Psychiatry*, 169(1): 36-41.
- Ballard, C. and R. Davies, 1996. Postnatal depression in fathers. *International Review of Psychiatry*, 8(1): 65–71.
- Ballard, C., R. Davis, P. Cullen, R. Mohan and C. Dean, 1994. Prevalence of postnatal psychiatric morbidity in mothers and fathers. *British Journal of Psychiatry*, 164(6): 782–788.
- Beck, C., 1996. Postpartum depressed mothers' experiences interacting with their children. *Nursing Research*, 45(2): 98 - 104.
- Beck, C., 2002. Theoretical perspectives of postpartum depression. *MCN: The American Journal of Maternal Child Nursing*, 27(5): 282-287.
- Bielawska-Batorowicz, E. and K. Kossakowska-Petrycka, 2006. Depressive mood in men after the birth of their offspring in relation to a partner's depression. *Journal of Reproductive and Infant Psychology*, 24(1): 22-29.
- Botorowicz, E. and K. Petrycka, 2006. Depressive mood in men after the birth of their offspring in relation to a partner's depression, social support, fathers' personality and prenatal expectations. *Journal of Reproductive and Infant Psychology*, 24(1): 21 – 29.
- Cowan, C.P., P.A. Cowan, G. Heming and N.B. Miller, 1991. *Becoming a family: Marriage, parenting, and child development*. In P.A Cowan & M.Hetherington (Eds), *Family transitions*. Hillsdale, NJ : Erlbaum. pp: 79–109.
- Davey, S., S. Dziurawiec and A. O'Brien-Malone, 2006. Men's voices: Postnatal depression from the perspective of male partners. *Qual Health Res*, 16(2): 206 - 220.
- Dudley, M., K. Roy, N. Kelk and D. Bernard, 2001. Psychological correlates of depression in fathers and mothers in the first postnatal year. *Journal Reproductive and Infant Psychology*, 19(3): 187 - 202.
- Dwenda Gjerdingen, K. and C. Bruce, 2003. First-time parents' prenatal to postpartum changes in health, and the relation of postpartum health to work and partner characteristics. *Journal of the American Board of Family. Practice.& Thinsp*, 16(4): 304-311.
- Endicott, J. and R. Spitzer, 1978. A diagnostic interview: The schedule for affective disorders and schizophrenia. *Archives of General Psychiatry*, 35(7): 873-843.
- Ferketich, S. and R. Mercer, 1989. Men's health status during pregnancy and early fatherhood. *Research in Nursing & Health*, 12(3): 137 – 148.
- Gao, L., S. Chan and Q. Mao, 2009. Depression, perceived Stress, and social support among first-time Chinese mothers and fathers in the postpartum period. *Research in Nursing & Health*, 32(1): 50 – 58.
- Gjerdingen, D. and B. Center, 2003. First-time parents' prenatal to postpartum changes in health, and the relation of postpartum health to work and partner characteristics. *Journal American Board Family Practice*, 16(4): 304-311.
- Goodman, J., 2004. Paternal postpartum depression, its relationship to maternal postpartum depression, and implications for family health. *Journal of Advanced Nursing*, 45(1): 26–35.
- Goodman, J.H., 2003. Postpartum depression beyond the early postpartum period. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, 33(4): 410–420.
- Goodman, J.H., 2008. Influences of maternal postpartum depression on fathers and on father – infant interaction. *Infant Mental Health Journal*, 29(6): 624–643.
- Harvey, L. and G. McGrath, 1988. Psychiatric morbidity in spouses of women admitted to a Mother and Baby Unit. *Br J Psychiatry*, 152(4): 505–510 in J.H. Goodman (2003), Paternal postpartum depression, its relationship to maternal postpartum depression, and implications for family health. *Journal of Advanced Nursing*, 45(1): 26–35.
- Hendrick, V., L. Altshuler, T. Strouse and S. Grosser, 2000. Postpartum and nonpostpartum depression: Differences in presentation and response to pharmacologic treatment. *Depression and Anxiety*, 11(2): 66-72.
- Hettema, J.M., 2006. A population-based twin study of the relationship between neuroticism and internalizing disorders. *American Journal of Psychiatry*, 163(5): 857–864.
- Lee, C., 1997. Social context, depression and the transition to motherhood. *British Journal of Health Psychology*, 2(2): 93–108.
- Ling-ling, G., C. Sally Wai-Chi and M. Qing, 2009. Depression, perceived stress, and social support among first-time Chinese mothers and fathers in the postpartum period. *Research in Nursing & Health*, 32(1): 50-58.

- Matthews, G. and I. Deary, 1998. Personality traits. Cambridge, UK: Cambridge University Press.
- Matthey, S., B. Barnett, J. Ungerer and B. Waters, 2000. Paternal and maternal depressed mood during the transition to parenthood. *Journal Affect Disorder*, 60(2): 75-85.
- Merriam-Webster Dictionary. Available from <http://www.merriam-webster.com/dictionary> [Accessed January, 21,2014].
- Milgrom, J. and P. McCloud, 1996. Parenting stress and postnatal depression. *Stress Medicine*, 12(3): 177-186.
- Neff, C., 2010. New dad, sad dad: Men too can suffer from postpartum depression. USA today. Available from <http://www.postpartummen.com/pdfs/USA-Today-PPND.pdf>.
- Paulson, J., S. Dauber and J. Leiferman, 2006. Individual and combined effects of postpartum depression in mothers and fathers on parenting behavior. Available from <http://pediatrics.aappublications.org/content/118/2/659.full.html>.
- Paulson, J., S. Dauber and J. Leiferman, 2011. Parental depression, relationship quality, and nonresident father involvement with their infants. *Journal of Family Issues*, 32(4): 528 – 549.
- Paulson, J.F. and S.D. Bazemore, 2010. Prenatal and postpartum depression in fathers and its association with maternal depression. *JAMA*, 303(19): 1961 – 1969.
- Phares, V., 1996. Fathers and developmental psychopathology. New York: Wiley Phares V, Lopez E, et al (2005). Are Fathers Involved in Pediatric Psychology Research and Treatment ? *Journal of Pediatric Psychology*, 30(8): 631 – 643.
- Radloff, L.S., 1977. The CES-D scale: A self- report depression scale for research in the general population. *Applied Psychological Measurement*, 1(3): 385-401.
- Ramchandani, P., A. Stein, J. Evans and T. O'Connor, 2005. Paternal depression in the postnatal period and child development: A prospective population studies. *Lancet*, 365(9478): 2201 – 2205.
- Raskin, V., J. Richman and C. Gaines, 1990. Patterns of depressive symptoms in expectant and new parents. *The American Journal of Psychiatry*, 147(5): 658-660.
- Ruchala, P. and L. Halstead, 1994. The postpartum experience of low-risk women: A time of adjustment and change. *Maternal – Child Nursing Journal*, 22(3): 83 – 89.
- Storey, A., C. Walsh and R. Quinton, 2000. Hormonal correlates of paternal responsiveness in new and expectant fathers. *Evolution Human Behaviour*, 21(2): 79 - 95.
- Swaab, D., A. Bao and P. Lucassen, 2005. The stress system in the human brain in depression and neurodegeneration. *Ageing Res Rev*, 4(2): 141-194.
- Thompson, E.R., 2008. Development and validation of an international english big-five mini-markers. *Personality and Individual Differences*, 45(6): 542–548.
- Tychey, C., 2007. Quality of life, postnatal depression and baby gender. *Journal of Clinical Nursing*, 17(3): 312-322.
- Walker, L. and K. Avant, 2011. Strategies for theory construction in nursing. 5th Edn., USA: Prentice Hall.
- Zaslow, M., F. Pedersen, R. Cain, J. Suwalsky and E. Kramer, 1985. Depressed mood in new fathers: Associations with parent-infant interaction. *Genet Soc Gen Psychol Monogr*, 111(2): 133, 135-150.

BIBLIOGRAPHY

- Lane, A., R. Keville and M. Morris, 1997. Postnatal depression and elation among mothers and their partners: Prevalence and predictors. *Br J Psychiatry*, 171(6): 550– 555.
- Miller, B. and D. Sollie, 1980. Normal stresses during the transition to parenthood. *Family Relations*, 29(4): 237 – 257 in B Miller & D. Sollie. (1986). *Coping with Life Crisis*. New York : Springer US. pp: 1129- 1138.