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**THE ASSOCIATION BETWEEN AGE, PARITY AND PERCEIVED SOCIAL SUPPORT TO POSTPARTUM DEPRESSIVE SYMPTOMATOLOGY**

presented by

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has been accepted towards fulfillment
of the requirements for

Master of Science degree in Nursing

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Date March 2, 1998

# THE ASSOCIATION BETWEEN AGE, PARITY AND PERCEIVED SOCIAL SUPPORT TO POSTPARTUM DEPRESSIVE SYMPTOMATOLOGY

By

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE IN NURSING

College of Nursing

1998

## ABSTRACT

### THE ASSOCIATION BETWEEN AGE, PARITY AND PERCEIVED SOCIAL SUPPORT TO POSTPARTUM DEPRESSIVE SYMPTOMATOLOGY

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Postpartum depression affects 9 to 15 percent of women who have recently given birth (Beck, 1995). The purpose of this study was to explore the relationship of age, perceived social support and parity of low-income women to postpartum depressive sympto,matology. Peck's Women's Self-Definition Model provided the conceptual framework. Secondary data collected by Schiffman and Omar (1994) for 65 low-income women. Data was analyzed using descriptive and frequency statistics. Information from this study will assist the APN working with low-income women during and after pregnancy to assess for signs and symptoms of depression. However, women, on average, had moderate levels of postpartum depressive symptoms. There were no significant relationships between effect age, parity and perceived social support and postpartum depressive symptoms. Implications for advanced nursing practice and further research include the need to assess other factors that may contribute to depression for all women during the postpartum period.

**To my mother Jeanette C. Henry, my father Milton Henry Sr. and my two brothers and two sisters. My familys' guidance, support and love intensified my passion to pursue this academic endeavor.**

## ACKNOWLEDGMENTS

To my thesis committee chairperson, Rachel Schiffman, RN, PhD, for her direction, time and support throughout my quest to readily complete my thesis at Michigan State University. To Millie Omar, RN, PhD and Jacqueline Wright, RN, MSN for their time and feedback needed in order to finish this project.

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# INTRODUCTION

## Background of the Problem

Postpartum depression affects 9 to 15 percent of women who have recently given birth (Beck, 1995). The birth of a child is often a joyful event, but it can also produce high levels of emotional difficulty which may lead to postpartum depression. The postpartum period is assumed to be a time in which women are at elevated risk for psychological distress (Stemp, Turner, & Noh, 1986). The purpose of this secondary analysis was to explore the relationship of age, perceived social support and parity of low-income women to depressive symptoms that may put the woman at risk for depression during the postpartum period. Age and parity which represent, in this study, the life experiences of women, and social support of women may influence the occurrence of depressive symptomatology; thus, these variables should be assessed during the pre-natal and postpartum period.

Postpartum depression is of particular concern because of the potential adverse effects for mothers and their children. Research has demonstrated "...postpartum depression can have serious consequences, especially if left untreated" (McGrath, Keita, Strickland, & Russo, 1990, p.

237). The symptoms that warrant attention are when women say that they feel overwhelmed, that they will never be the same, or that they feel hopeless or out of control, nervousness, or suffer from insomnia. Detection of postpartum depressive symptomatology by health care professionals is relatively low because the cause and/or predisposing factor(s) are unknown and there remains to be a lack of evidence as to what differentiates normal from abnormal reactions to childbirth (Nicholson, 1990). Lack of social support, young age, and high parity have been shown to be related to postpartum depression (Bridge, Little, Hayworth, Dewhurst, & Priest, 1985; Logsdon, McBride, & Birkimer, 1994; O'Hara & Swain, 1996). The progression of depression from the prenatal through postpartum periods has received attention (Buesching, Glasser, & Frate, 1986). In the United States, considerable attention has been given to characteristics of women with postpartum depressive symptomatology (Cutrona, 1986; Logsdon et al., 1994). Variables such as pre-natal depression, cognitive-behavioral measures, age, parity and social support have been investigated in an attempt to predict postpartum depression (Beck, 1996; Gjerdingen & Chaloner, 1994; O'Hara, Neunaber, & Zekoski, 1984; Randell, 1993; Stemp, Turner, & Noh, 1986).

Serious implications for the welfare of the family and the psychological development of the child are consequences of depression during the puerperium (Boyce & Stubbs, 1994; O'Hara, 1994; Philipps & O'Hara, 1991). Postpartum

depression is the end result of a long established maladjustment period which leads to the disorder in women. Research findings have consistently demonstrated that maternal depression has an adverse effect on children's general behavioral and developmental functioning and physical/verbal aggression (Gotlib, Whiffen, Mount, Miline, & Cordy, 1989; Alexandra, Caplan, Cogil, Kumar, & Robson, 1989; Whiffen & Gotlib, 1989). Among low-income mothers of young children, chronic stressors such as inadequate income, unemployment, inadequate housing, parenting worries, and interpersonal relationships were associated with high depressive symptoms (Hall, 1990; Hall, Williams, & Greenberg, 1985). According to Buesching (1986) "most studies to date investigating the nature (symptomatology), the distribution (prevalence), and the cause (etiology) of postpartum emotional syndromes have been conducted using designs where data were collected either after or during the event" (p. 1182).

Maternal age, perceived social support and high parity are related to postpartum depressive symptomatology especially in low-income women. The low socio-economic status of women in the postpartum period may increase the likelihood of depressive symptomatology as a result of financial difficulties, lack of resources and lack of social support. During the postpartum period, women are involved in the health care system for themselves and for their new baby. Because of this involvement, Advanced Practice Nurses

(APN) in primary care are in a key position to intervene with women suffering from depressive symptoms in the postpartum period. Because many women are ashamed about how they are feeling, health care professionals' understanding of postpartum illness and knowing what signs to look for are vital to an effective intervention. APNs' might have to take the first step in helping mothers through their transition to motherhood.

Advanced practice nurses are probably among the few professionals with whom women during the postpartum have contact. Even though the APN's time with mothers may be brief, health care professionals should pay particular attention to women's concerns and issues because the contact may be the only link between mothers and sources of help. Sometimes using a structured format in order to find out how women feel is helpful. Recognizing the symptoms that mothers complain of during the weeks or even months after delivery is essential in the detection and treatment of depressive symptoms in the postpartum period.

This secondary study focused on women's perception of social support received from family, friends and health care professionals after the delivery of a child and how these perceptions are associated with age and parity in relation to depressive symptoms. A better understanding of these relationships may result in anticipatory guidance in terms of the emotional course that many experience in the first postpartal months. Advanced practice nurses in primary care

practice preventative and health promotive activities on a daily basis. So, it is the responsibility of the APN to be cognizant of the possible untoward effects that may occur in the postpartum period as a result of postpartum depressive symptomatology. APN's can be influential in evaluating mother's needs, and thus providing primary preventative services for depressive symptoms in the postpartum period.

## Statement of the Problem

Since the fourth century B.C., mental disturbances in women occurring soon after childbirth have been observed and described but basic questions regarding etiology of postpartum depressive symptomatology remain unanswered. While this secondary study does not address the etiology, variables that may contribute to depression in the postpartum period were explored. Postpartum depression became a mystery disease because referral was uncommon thus becoming a hidden disease in the homes or hearts of the sufferers. Today, we are not much closer to understanding the interaction between life experience (age, parity, and perceived social support in relation to depressive symptoms in the postpartum period. In order to detect and effectively manage patients at risk for a postpartum depressive disorder, future research needs to be directed toward prospective and longitudinal examination of puerperal depression. Therefore, for this study age, parity and perceptions of social support were investigated as three

perceptions of social support were investigated as three factors that may be related to the depressive symptoms during the postpartum period.

The research questions in this study were:

1) Is there an association between women's perceived social support and postpartum depressive symptoms?
2) Is there an association between age and postpartum depressive symptoms?
3) Is depressive symptomatology in the postpartum period dependent upon parity?
4) To what extent and in what manner are women's age, parity and perceived social support related to postpartum depressive symptoms?

## Conceptual Framework

### The Women's Self-Definition in Adulthood Model

The Women's Self-Definition in Adulthood Model developed by Peck (1986) was used as the conceptual model for this study. The self-definition model is based upon current research on women's adult experiences. The model utilizes a feminist approach which emphasizes the importance of relationships. "This model seeks to describe factors affecting the way in which a woman's sense of self is defined and redefined during the adult years" (Peck, 1986, p. 277).

There were two conceptual frameworks from which the self-definition model was developed. First, is the psychological model of adult development which was proposed

by Bernice Neugarten (1968). Neugarten (1968) and Neugarten and Datan (1973) suggest that chronological age is an inaccurate index for measuring progression through life. However, the concept of timing-of-events stresses the importance of applying social-historical context to adult development. "This social-historical dimension also subsumes chronological time and psychological aging" (Peck, 1986, p. 277).

Gilligan's (1982) study of the role of relationships and attachment in women's adult lives was the second most important concept in this model. Gilligan's findings indicate that by ignoring attachment, an unrealistic view of adult life will be recognized. Therefore, "the elusive mystery of women's development lies in its recognition of the continuing importance of attachment in the human life cycle" (Gilligan, 1982, p. 23).

Social-historical time dimension, sphere of influence, and self-definition are the three main components of the model (see Figure 1). The social-historical time dimension and the timing of events theory are directly related, the sphere of influence relates to the sum of relationships and attachment theory, and self-definition relates to a woman's knowledge of herself as an individual in society.

The model (see Figure 1) is shaped like a cylinder and is depicted as having several layers/walls. The first wall is the social-historical time dimension which encompasses a flexible outer wall. Peck (1986) describes the social-

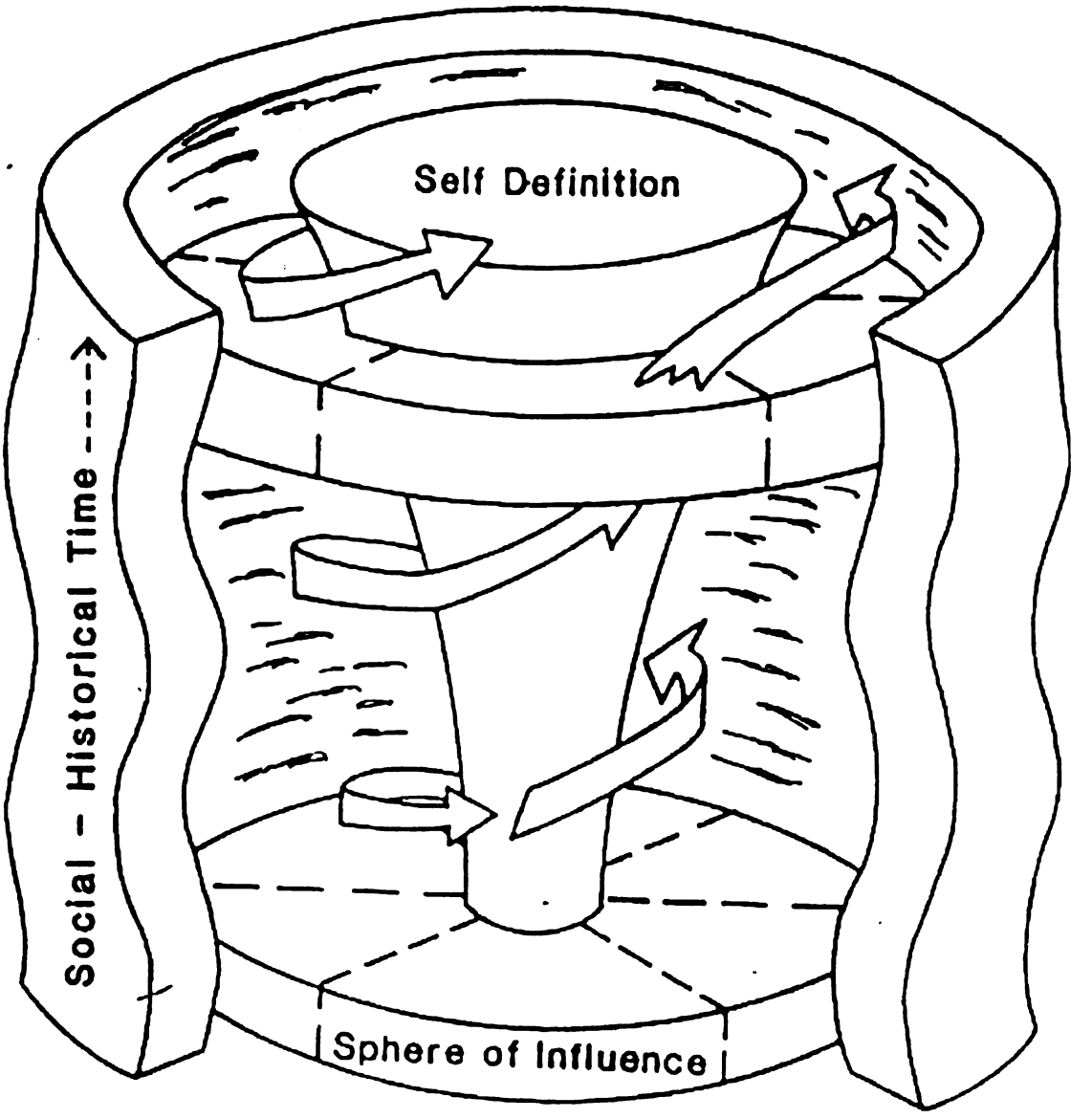


Figure 1. From "Women's Self-Definition in Adulthood," Peck, T.A., 1986, Psychology of Women Quarterly, 10, 278.

historical dimension as the outer wall that is flexible and corresponds to fluctuations in the adult experience. Hence, "the social-historical time dimension is perceived as the social, emotional, and political context within which a woman is allowed to define herself at any given point in time" (Peck, 1986, p. 278).

The next layer of the model (see Figure 1) is the sphere of influence. The sum of a woman's relationships is represented by the sphere of influence. Relationships of varying degrees of closeness, i.e. spouse/lover, children, friends are another component of the sphere of influence. The sphere of influence also represents the relationships a woman has with work. The issue of interest here is the degree of satisfaction and sense of competence a woman receives from her productive efforts. Relationships are described as having a bi-directional effect which means a woman exert influence and is influenced by her relationships.

There are two vital characteristics of the sphere of influence: flexibility and elasticity, that must be addressed. Flexibility is the ability of the woman to expand and contract her sphere of influence to either include new relationships or prevent new relationships, respectively. Peck (1986) suggests that flexibility occurs when "...a woman is able to redistribute her emotional involvement with each relationship in order to receive support and reaffirmation of the self when necessary" (p.

279). Elasticity is the way certain relationships in the sphere are receptive to a woman's experiences and self-definition. Elasticity is the principal manner in which a woman's influence upon the people around her are observed. The woman can see herself as exerting control over the degree to which others' needs and expectations influence her actions. Therefore, the woman has the ability to separate others' concerns from her own.

Self-definition is depicted as a funnel which emerges from the center of the sphere of influence (see Figure 1). The sum of social-historical forces and the elasticity and flexibility of the sphere of influence directly affects self-definition in this model. Clarification of self-definition in this model occurs with the passage of time and this process is portrayed as a spiraling motion. The spiraling motion is indicative of the woman's constant engagement in monitoring her own growth and change against their possible impact upon her valued relationships.

## Application of Model to Study

The variables in this study were conceptualized within the original model (see Figure 2). Postpartum depressive symptomatology is the outcome variable in this study and falls within the self-definition dimension. The adult experience of women affects relationships (social support) and self-identification (depressive symptomatology) and is represented by the outer wall (social-historical). The events that occur in the outer wall are influenced by the

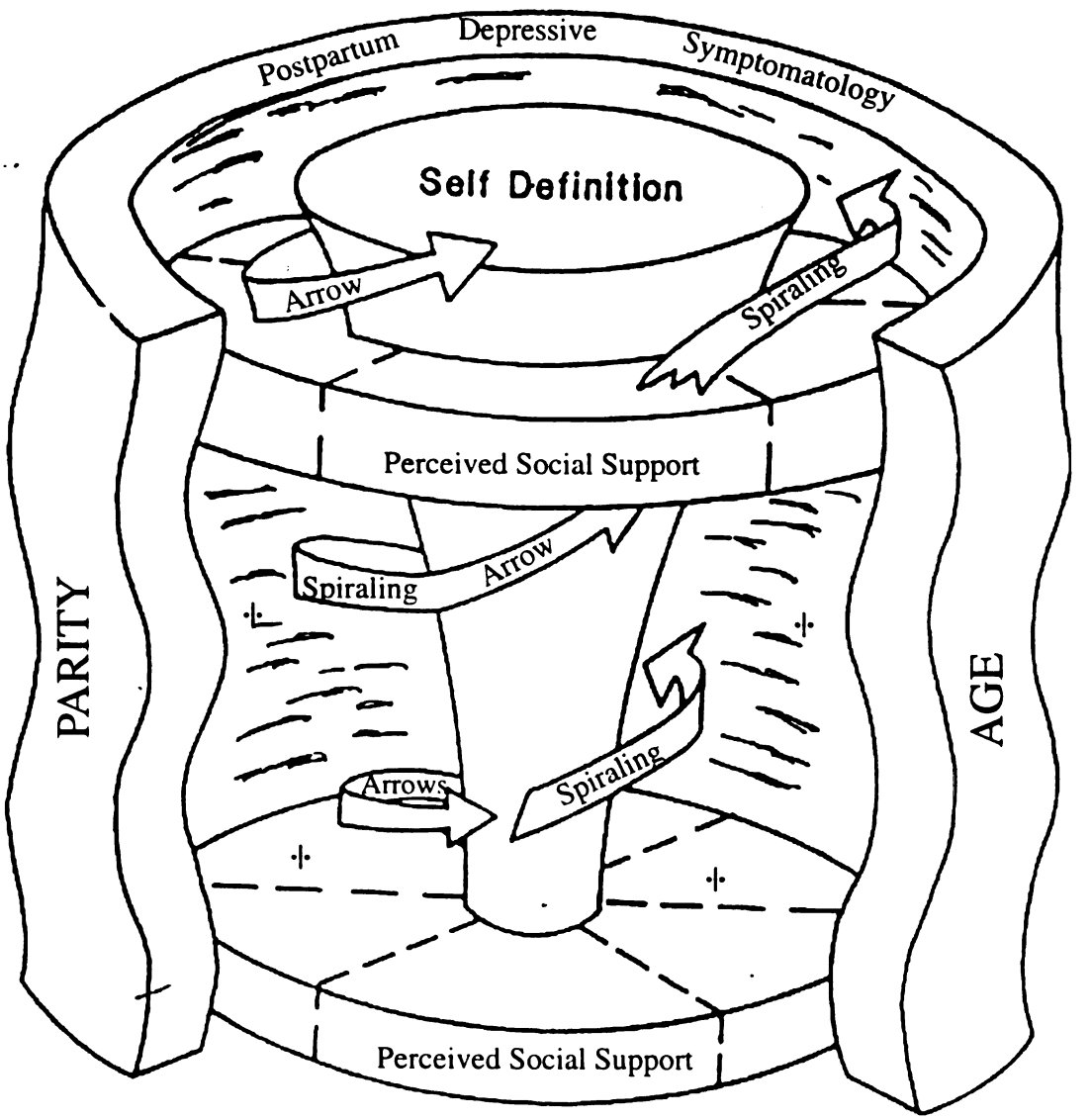


Figure 2. An adaptation of the model, "Women's Self-Definition in Adulthood," Peck, T.A., 1986, Psychology of Women Quarterly, 10, 278.

point in time in which they take place. The social-historical time dimension also subsumes the variables age and parity.

The timing in which adult experiences occur has an effect on social development. The woman's social-background has an impact upon the development of self-knowledge. Also, cultural, economic and political events have an impact upon the life circumstances of the adult woman. Low economic status may contribute to lack of experiences needed for social development in women.

Social-Historical Time

Age. The concept of age fits into the social-historical time dimension. Age was conceptualized by chronological development and social historical time (life experiences). Cohorts are subpopulations having common characteristics, often age-related. Each cohort is a sample that is selected at different points in time (e.g. the cohort of women bearing children between 1992-93). Each cohort is unprecedented in general health, life experiences, and self-definition. When differences between members of differing cohorts are compared, the premise underlying differences becomes apparent. Due to the effects of social-historical time of lives, members of different cohorts grow older in different ways (Riley, 1994).

Age is clearly a representation of chronological developmental level but also age identifies differences in life experiences. Assessment of the changes that are

associated with the person over time is the focal point of the developmental view. The experiences that accompany different age groups over time emphasizes the history of the person. Different cohorts experience changes among numerous processes: psychological, sociological, emotional and historical dimensions of existence. The interrelatedness of chronological development and life experiences and how the constructs are related to age was of concern in this study.

When examining young cohorts, one must take into account that this group encounters drastic changes in themselves and in their environment during their development. One of the major psychologic changes facing the young cohort is the development of an identity. Social, and emotional forces also contribute to the development of this sense of identity. During the radical transformations in the experience of self, adolescents are confused and ambivalent. In one case, experience leans toward the outer (or interpersonal) boundary; in the other, it leans toward the inner (or intrapsychic) boundary. With younger cohorts in both situations, the fulfillment of development must involve a filling out of the experiential field, so that awareness can flow from the interpersonal to the intrapsychic and back again.

If younger cohorts encounter pregnancy before self-identification is obtained negative outcomes may occur for both the mother and child. Pregnancy is likely to disrupt the normal processes of psychosocial development for both

the young mother and child. Young people lack the physical maturity and the attainment of the level of social, educational and financial responsibility essential for parenthood. Younger cohorts lack the stability and experience that older cohorts posses. Therefore, pregnancy at a young age may lead to conflict and confusion.

In contrast, the life experiences, physical, emotional and social maturity (formation of identity) of older cohorts enables this group to obtain necessary relationships over time. The development of self-identification in older cohorts is more stable and solid, and inner and outer worlds of experience are reorganized so that a certain sort of relationship between self and environment becomes possible. The relationships that older cohorts experience are more directed toward family building and maintenance, career fulfillment and social involvement. Older cohorts are able to accept and give oneself to others so that a bi-directional relationship is formed. For this study age was conceptually defined as the life experiences of women within the context of cohorts.

Parity. Parity is a concept that also fits into the social-historical time dimension. The variable, parity, is defined as "...the number of live-born children and still-births a woman has delivered at more than 28-weeks of gestation" (Mosby's, Medical, Nursing, and Allied Health Dictionary, 1995, p. 808). While parity has a specific medical definition, in this study it also represents the

life experiences of a woman. The number of children a woman has is influenced by the point in time in which the woman lives.

The number of children a woman has (parity) may influence the development of depressive symptomatology in the post-natal period. Women who are expecting a child(ren) are faced with changing roles and new demands. Particularly, the birth of a first child leads to significant changes in every aspect of her life. The woman is faced with new skills to be learned, new responsibilities, a new social role, and dramatic psychological changes as her baby readjusts following delivery. Most mothers grieve over the loss of former stability as their everyday routine with a new baby radically alters this. Historically, first-time mothers may experience depressive symptoms when the postpartum experiences are more negative than anticipated (Hackel & Rubel, 1992).

The same principle is true for multiparous women. The woman must now care for the new child, while also engaging in activities with the other child(ren). The birth of a second or third child appears to precipitate a period of psychological adjustment as the woman's investment in the renewed parenting is strengthened and the time before which she might gain a sense of continuity with her old life is lengthened (Nicholson, 1990). In a study of mothers with young children, prevalence estimates high depressive

symptoms (Hall & Farel, 1988). The highest scores were among, low-income or unemployed, unmarried young mothers, also these women had young children and were poorly educated (Hall, 1990). Primiparous and multiparous women have different life experiences which may put them at risk for the development of depressive symptoms in the postpartum period. In this study, parity was defined as the different experiences that women have in relation to the number of children they have.

## Sphere of Influence

In order to understand the concept, perception was defined first and independently of social support. Both concepts were then combined to formulate the definition of perceived social support.

Perception. To perceive is the process by which an organism interprets sensory input so that it acquires meaning (Lefton, 1985). Each person senses, interprets, and understands events differently. Perception is an important construct that must be assessed on an individual basis by health care providers in primary care settings. Today, research studies on health promotion, disease prevention, and management of chronic illness are beginning to realize the importance of knowing the patients' point of view related to their health. Acknowledging the importance of patients' perceptions regarding health care may enable the APN to anticipate patient's needs, questions and concerns.

Social Support. This concept was defined as the aid that a person receives from others. Thoits (1982) used the term social support to ascribe to the "subset of persons in the individual's total social network upon whom he or she relies for socioemotional aid, instrumental aid or both" (p.48). Crnic, Greenberg, Ragozin, Robinson, & Basham (1983) suggest that social support " is generally considered to have a number of dimensions, including instrumental assistance, information, provision, and emotional empathy, and understanding" (p. 209).

Norbeck, Lindsey, and Carrieri (1981) conceptually based the definition of social support as put forth by Kahn (1979) and addressed the functional social support components of affect, affirmation, and aid. Affect refers to the expression of positive attitude of one person toward another; affirmation refers to the approval of another's deeds, beliefs, or perceptions; and aid is the giving of symbolic or material assistance to another (Norbeck et al., 1981). House and Kahn (1985) explicate that social support can be attributed to a number of different aspects of social relationships which they describe as the "domain of social support" (p. 84). The three ways to conceptualize and operationalize the term social support are the basis of this domain.

First is the existence of a general relationship or specific types such as marriage, friendship or organizational membership. Social integration or isolation

are terms used to refer to the existence or quality of relationships. Second, is a person's social network which can be related to the structures existing among a set of relationships such as density, homogeneity, or range. The third domain is the functional content of relationships, or quantity of relationships contributed by others, such as affirmation, instrumental or tangible aid, emotional and influential concern, information and degree to which the relationship flows. House and Kahn (1985) state "it is necessary to consider all three aspects of social relations-quantity, structure, and function because they are logically and empirically interrelated" (p. 85).

Collins et al. (1993), Gotlib et al. (1991), McIntosh, (1993), and Logsdon et al. (1994) are recent reviews of what is becoming a extensive amount of literature verify the beneficial effects of adequate social support on an individual's psychological health. According to Norbeck et al. (1981) "...social support has been shown to be a robust variable in a wide-range of health-related contexts" (p. 264). Boyce, Schafer, and Utti (1985) explain that in the postpartum period there is a positive relationship between social support and mothers' mental health (p. 77). This would indicate that those who have recently given birth to a child and lack support are much more vulnerable to psychological distress than new mothers who possess support. Perceived social support is conceptualized to include the definition of perceived and social support. For the purpose

of this study, perceived social support was defined as the mother's interpretation and meaning acquired (perceived) from the quantity, structure, and functional content of her social support system (social support) during the postpartum period.

The concept perceived social-support fits into the sphere of influence (see Figure 2). Relationships with spouse/lover, children, extended family members, and friends (sphere of influence) may influence a woman's postpartum experience. The woman may decide to accept or reject support from others. The bi-directional effect of relationships is represented by small arrows within the sphere of influence. Bi-directional effects of relationships enable the woman to redistribute her emotional involvement (flexibility) in order to receive support and reaffirmation during the postpartum period. During the postpartum period, expanding the sphere of influence may be needed in order to incorporate new relationships. New relationships with health care providers and/or with members of a support groups may prove beneficial during this period of transition. The mother determines if the relationships in the sphere are responsive to her changing needs, motivations, and self-definition (elasticity). Elasticity allows the mother to assess what her life may be like being a mother and to differentiate the baby's, husband's and other's concerns from her own. An elastic sphere of influence enables the mother to see that childrearing may

affect her mental status, but that she has some control over the degree to which depressive symptomatology hinders her performance as a mother. Lack of elasticity can occur if the needs of the mother are not differentiated from others. Inelasticity may cause the mother to feel anxious and depressed.

## Self-Definition

Postpartum Depressive Symptomatology. Postpartum depressive symptomatology is the concept that fits into the dimension of self-definition. The self-definition of females after childbirth may be disrupted as a result of depressive symptoms in the postpartum period. The development of depressive symptoms during the postpartum period may be an undesirable outcome of pregnancy. Depressive symptomatology during the postpartum period may be dependent upon what is happening to the female/mother in the social-historical time dimension and the sphere of influence.

Clinical depression, also called major depressive episode, is "an abnormal emotional state characterized by exaggerated feelings of sadness, melancholy, dejection, worthlessness, emptiness, and hopelessness that are inappropriate and out of proportion of reality" (APA, 1994). While in this study depressive symptoms are being studied during the postpartum period, depressive symptoms for clinical depression are the same. The overt manifestations, which are extremely variable, range from a slight lack of

motivation and inability to concentrate to severe physiological alterations of body functions and may represent symptoms of a variety of mental and physical conditions (Lefton, 1985). The symptoms can cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. The disorder, which may occur in children, adolescents, and adults, may develop over a period of days, weeks or months; episodes may occur alone or in clusters, separated by years of normality. Depression in the postnatal period is distinguishable from major depressive episodes by the onset associated with childbirth.

There is a spectrum of affective disorders following childbirth. O'Hara and Zekoski (1986) divided affective disorders following childbirth into three classes in ascending order of severity: postpartum blues, postpartum depression, and postpartum psychosis. The postpartum blues include weepiness and anxiety between 2-10 days after delivery which is usually transitory (Kendell, Mackenzie, West, McGuire, & Cox, 1984; Kennerley, 1987). Postpartum depression is a more serious situation than the blues, and depressive symptoms last longer and are more severe (Kendell-Tackett & Kantor, 1993). Postpartum psychosis is an incapacitating disorder that usually requires hospitalization (Gotlib, Whiffen, Wallace, & Mount, 1991). Mothers experiencing depressive symptoms in the postpartum period "...constitutes those affective disorders whose

severity falls in between the blues and psychosis. With respect to the validity of the distinctions among these three disorders, it is as yet unclear whether they are distinguishable on grounds other than severity and length of impairment" (Gjerdigen & Chalonor, 1994). Postpartum depressive symptoms warrant serious attention due to far-reaching consequences for the mother and her child.

Depressive symptomatology in the postpartum period refers to a non-psychotic depressive episode that begins in or extends into the postpartum period (Cox, Murray, & Chapman, 1993; O'Hara, 1994). Depressive symptomatology as measured by Radloff (1977) emphasizes the affective component and depressed mood of the individual. Requirements for a diagnosis of depressive symptomatology in the postpartum period include the experience of at least one of the following symptoms: "frequent crying, irritability, fatigue, loss of interest, feelings of inadequacy, anxiety, sleep disturbance, lethargy, loss of appetite, feelings of panic, suicidal thoughts" (McIntosh, 1993). Typically, there will be a requirement that the symptoms be present for a certain amount of time and result in some impairment in the woman's functioning (Cooper & Murray, 1995; O'Hara, Zekoski, Philipps, & Wright, 1990).

For many mothers, emotional difficulty presents following the birth of a baby. Nemtzoe (1987) suggests that depressive symptomatology in the postpartum period is distinguished from other depressions by anxiety concerning

the infants' well-being and self-doubts about the capacity for "normal" maternal feelings. Depressive symptoms in the postpartum period must be recognized and promptly treated with a team approach by health care providers in order to decrease the occurence of postpartum depression symptomatology. Clinicians often overlook depressive symptoms in the postpartum period because the symptoms are seen as "normal" concomitants of childbirth. The postpartum period is often characterized by considerable physical, emotional and social changes for women (Gjerdingen & Fontaine, 1991). "Accurate estimates of rates of and risk factors for postpartum depression are important for the scientific and clinical understanding of non-psychiatric disturbance during the puerperium as well as for planning mental health services for childbearing women and their families" (O'Hara & Swain, 1996, pg. 37).

During the postpartum period and beyond, the funnel shape of self-definition for mothers is re-forming. The self-definition will grow and expand toward a more adult stage of development which is represented by the spiraling action. Rubin (1984) suggests that childbearing necessitates an exchange of a known self in a known world for a unknown self in an unknown world. The mother will begin to distance the historical self from the self of the present and the future. Achieving this goal is a life-long process that involves differentiation of self from not-self. As such, Randell (1993) suggests that the woman forms the

perception of self as the "real me" versus "self as a mother".

Self-defintion of females in the postpartum period can be distorted due to depressive symptomatology. During this period, flexibility and elasticity can keep people within their circle of support as well as keep them out. She may experience motherhood differently than she expected. Women may expect postpartum support that is not received which may lead to negative consequences. "When expectations are not met, a consequence of this discrepancy between expectations and reality may be feelings of depression" (Logsdon et al., 1994, p. 451).

Once the mother synthesizes her new role as mother while continuing to be herself, self-definition becomes clearer. Enduring in the face of an obstacle, she may engage in a process designed to continue to be herself within the new context created by the new role, motherhood. Depressive symptomatology in the postpartum period may be a product of the experience of differentiating her new role while maintaining her identity. This is likely to be crucially influenced by the way in which that experience is interpreted by the mother involved.

For the purpose of this study, depressive symptoms in the postpartum period include depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite and sleep disturbance. If the depressive symptoms in the

postpartum period occur frequently and or are severe enough an indication for risk of clinical depression may prevail.

## Summary

The model of Women's Self-Definition provides an appropriate framework to allow the APN the ability to assess and intervene with childbearing females for risk factors and early detection of depressive symptoms in the postpartum period. APNs who utilize this model are in a position to comprehensively understand the mother's social-historical time dimension (age and parity), sphere of influence (perceived social support) and level of self-definition (postpartum depressive symptoms) in the postpartum period. An understanding from this perspective will enable the APN to assess mother's feelings regarding emotional disequilibrium in the postpartum period and support from health care providers. The Self-Definition Model can be implemented in practice by the APN as a framework for assessment, treatment and intervention.

## Review of Literature

The literature for this study includes research on age, social support and parity as factors that may contribute to the development of postpartum depressive symptomatology. It was found that research investigating depressive symptomatology primarily focused on social support but not age and parity. Additionally, many studies that did not include age and parity as independent variables did control for these two variables as extraneous variables. The few

studies that did examine age and parity as they relate to postpartum depressive symptoms were conducted by European researchers more than 10 years ago. Both European and United States researchers who investigated the variables age, parity, and social support were included in the review of literature.

## Social Support and Postpartum Depressive Symptomatology

O'Hara and Swain (1996) suggest that several studies investigated the relationship between various aspects of social support and subsequent depression in the postpartum period. Social support during pregnancy and its relation to depressive symptomatology in the postpartum period has received considerable attention from researchers in the United States and Europe. Several U.S. and European (Feggeter, & Gath, 1981; Gottlieb & Mendelson, 1993; McIntosh, 1993; O'Hara, Rehm & Campbell, 1983; Paykel, Emms, Fletcher, & Rassably, 1980) found that social support is a relatively potent risk factor for high levels of depressive symptomatology in the postpartum period. O'Hara and Swain (1996) suggest that, in order to facilitate interpretability of findings, examining the method used to measure social support is necessary. Also, "discrepancies between prenatal social support expectations and subsequent perceptions of support actually received..." (Logsdon et al., 1994, p. 449) in relation to depression in the postpartum period should be assessed when examining the relation between the two variables. Stemp et al. (1986) realize that these confused

situations have led to an inability to summarize the relationship between social support and psychological distress in the postpartum period in a straightforward manner.

Logsdon et al. (1994) tested the relationship between insufficient emotional and instrumental support from spouse and postpartum depressive symptomatology. Lack of perceived social support from husband was related to postpartum depression symptoms in a sample of 105 subjects. This study was based on O'Hara et al. (1990) findings that depression is related to inadequate supportive relationships from spouse. Social support measures have assessed either social network or perceived support in relation to predicting outcomes (depression in the postpartum period). The results of O'Hara's et al. (1990) study showed that women who perceived adequate social support from their husbands reported fewer depressive symptoms in the postpartum period. The findings from this study suggest if the extent of support received is not the type or amount perceived, depression may increase.

Cutrona and Troutman (1986) proposed a model of maternal postpartum depression symptoms in which supportive interpersonal relationships were construed as a protective resource. The women in the study were assessed during pregnancy and again 3 months postpartum. The mother's level of postpartum depression, both directly and through the mediation of parenting self-efficacy, was tested. Although,

perceived self-efficacy in the parenting role is not of concern in the present study, the importance of social support during the postpartum period remains.

Cutrona and Russel (1990) suggest that women reporting high levels of social support subsequently reported less depressive symptomatology three months after delivery. Mothers who had other people on whom they could rely for a variety of social provisions were shown to have an effective deterrent to depression in the postpartum period. Social support is an invaluable resource for mothers adjusting to the addition of a child to the family. The potential for facilitating and/or impeding depressive symptomatology is the key feature underpinning social support.

McIntosh's (1993) study made a clear association between the incidence of depression, the quantity of support which mothers had at their disposal and the social impact of motherhood. The amount of support received by mothers in the postpartum period is very important when discussing depressive symptoms and the results in this study confirm this assumption in this sample of women. This study also indicates that the experience of motherhood itself and the support which mothers are able to claim from partners and their social networks may play a vital part in the evolution of depression in the postpartum phase.

Cutrona (1984) examined specific components of social support and stress as predictors of depressive symptoms following the birth of the first child. Eighty-five women

aged 18 years of age or older and without serious medical complications of pregnancy were included in the study. Grounded on Weiss's (1974) Relational Provisions Model, several instruments were developed to measure perceived social support, depressive symptomatology and dimensions of stress. The women were interviewed and asked to complete questionnaires at four time points: during the third trimester, two weeks after delivery, and again eight weeks after delivery and one year postpartum. Results of the study showed that overall social support predicted depression only in the later weeks of the postpartum period.

Wasserman, Brunelli, and Rauh (1990), Collins, Dunkell-Schetter, Lovel, and Scrimshaw (1993), Cutrona (1984) assessed social support and its influence on psychological well-being during the postpartum period. All three studies identified that there is a positive relationship between the perceived support and the person who provides the support to psychological well-being. These studies support the need for evaluating mother's social support system before and during the postpartum period in order to decrease the probability of psychological disequilibrium.

Longsdon et al. (1994) and Cutrona (1984) specifically looked at social support as it relates to depressive symptomatology in primiparous women. Longsdon et al. evaluated how womens' perceived postpartum closeness to the husband influenced depressive symptoms. Cutrona (1984) interrelated specific components of social support and

stress to postpartum depressive symptoms. Logsdon et al. (1994) found that mothers have expectations for postpartum support and that failure to receive desired support may result in negative consequences. Cutrona (1984) found that mothers with high levels of support reported fewer negative postpartum events. The two studies provides evidence regarding the need to assess the mother's perceptions of their support system in the pre-and-postnatal periods.

## Age and Postpartum Depressive Symptomatology

Kemp, Sibley, and Pond (1990) suggest that there is very little research performed which correlates variables in pregnancy and the early postpartum period to the age of mothers. Previous studies examining age and its relation to postpartum depression symptoms in the postpartum period were conducted by researchers in Europe. Two European studies (O'Hara, Neunaber, & Zekoski, 1984; Paykel, Emms, Fletcher, & Rassaby, 1980) found that younger women were more at risk. Adolescence is a time of conflict and confusion and hence pregnancy may contribute to emotional disequilibrium in the postpartum period. However, another European study found that older women were more at risk (Kumar & Robson, 1984). Also, the literature indicated the age of mothers when the variable was correlated to depression in the postpartum period. The literature lacks in the investigation of low-income mothers of varying ages in relation to depressive symptomatology in the postpartum period.

Most of the research acknowledged that age of the mother did have an effect on the development of depressive symptomatology in the postpartum period (Kemp, Turner, & Noh, 1986; Stowe & Numeroff, 1994). Age is a sociodemographic variable that has received attention in its' relation to postpartum depression has been found in five studies. Four studies (Feggeter & Gath, 1981; Hayworth et al., 1980; O'Hara, Neunaber, & Zekoski, 1984) have found that younger women were more at risk, and one study found that older women were more at risk (Kumar & Robson, 1984).

Troutman and Cutrona (1990) identified that adolescent mothers are more likely to experience depressive symptoms in the postpartum period. Shimizer and Kaplan (1987) support the above findings and suggest that advancing maternal age was not significantly associated with postpartum depression. Although maternal age associated with postpartum depression has not received considerable attention in the literature, various studies examining maternal characteristics of postpartum symptomatology control for this variable (Collins, 1993; Beck, 1995). Controlling for maternal age as an extraneous variable is suggestive of its potential predictive effects of postpartum depressive symptomatology.

Parity and Postpartum Depressive Symptomatology

The literature that exists regarding parity in relation to postpartum depressive symptomatology is limited in the United States population. However, European researchers have found a significant relation between parity and

depression in the postpartum period in six studies. In three studies, higher parity has been associated with higher levels of postpartum depression symptoms (Jurrahi-Zadeh, Kane, Van DeCastle, Lachenbruch, & Ewing, 1969; Playfair & Gowers, 1981; Tod, 1964) and in three studies lower parity was associated with higher levels of postpartum depression (Bridge et al., 1985; Gordon, 1961; Martin, 1977). Other studies included parity as an extraneous variable, but did not pursue the meaning of the relationship or possible association with postpartum depressive symptomatology (Cutrona, 1983; Gjerdingen & Chaloner, 1994; Gottlieb & Mendelson, 1995). Although some research reported that parity may be correlated with postpartum depression, the direct and indirect effects of the number of children were not analyzed.

British researchers, Bridge et al. (1985) identified that parity was significantly associated with depression in the postpartum period. The sample included 109 women during the course of pregnancy in an attempt to predict which of them would present with depressive symptomatology up to 12 months in the postpartum period. Primiparity was significantly associated with severe depression at six months postpartum. Of the subjects approached for comprising the study sample ($n$=161) only 109 women were studied up to 6 weeks in the postpartum period. Of the subjects who reported depressive symptomatology, up to six weeks in the postpartum period, 39.5% of the sample were

primiparous and 60.5% were multiparous. However, at six months postpartum all women reporting depressive symptoms were primiparous, only one of whom had been depressed at six weeks postpartum. Possibly, then, depressive symptomatology in the postpartum period presents at a later stage for primiparous than for multiparous women.

## Critique of Literature

Several studies investigated the relationship between various aspects of social support and subsequent postpartum depressive symptomatology. However, these studies employed a large number of different methods and specific measures to determine depression and social support. The Postpartum Support Questionnaire (Logsdon et al., 1994) and the Social Support Questionnaire (Sarason, Levine, Basham, & Sarason, 1983) are examples of these single-use measurement tools. The inconsistency between studies on the assessment tool employed may account for variability in findings between social support and postpartum depressive symptomatology.

Many background factors have been studied, although few of these factors (marital status, education level, adverse life events) have shown any consistent association with post-partum depression (Kemp et al., 1990; O'Hara et al., 1983; Stemp et al., 1986). Most studies did not indicate if they used urban or rural low-income populations or did not report the income for the pregnant women (Collins et al., 1993; Hall (1990). Only 2 of the 13 studies that reported on the relation between depression symptoms in the

postpartum period and socioeconomic status showed a significant association (Feggetter & Gath, 1981; Playfair & Gowers, 1981).

Most studies included an adequate sample size, however a wide range of variability from 12 to 280 subjects participated in the research (Logsdon et al., 1994; Stemp, et al., 1986; Wasserman et al., 1990). Studies with large sample sizes distributed questionnaires during prenatal visits to mothers (Kumar & Robson, 1984; O'Hara et al., 1984) while other studies with small sizes utilized interviews (Affonson et al., 1990; Beck, 1995). Even though sample sizes varied among studies, the numbers were adequate for the variables discussed. The authors did not discuss if populations were nonprobability or probability samples but included adequate information as how participants were selected and criteria for selection (Buesching et al., 1986; Gottlieb & Mendelson, 1995; Hopkins et al., 1987). Questionnaires were used in most studies reviewed, however the authors did not include a copy of the tool which prevented the reader from duplicating the studies (Buesching et al., 1986; Gottlieb & Mendelson, 1995; Kumar & Robson, 1984; O'Hara et al., 1984). In most of the literature, there was a lack of information regarding the questions and the reliability and validity of instruments used which posed as a deficit in the method sections. Information regarding statistical analysis was often complete and found in the

data analysis sections (Logsdon et al., 1994) and charts and statistical findings were included in the reports (Collins et al., 1993; McIntosh, 1993).

The literature that exists lacks in regards to studies conducted in the United States, low income mothers, and the association to depressive symptomatology in the postpartum period. This study adds to the knowledge about age, parity, and perceived social support and its relationship or influence in the development of depressive symptoms in low-income mothers in the postpartum period which may lead to the development of postpartum depression.

## Methods

### Design

The design was a secondary analysis, descriptive correlational study of low-income pregnant women. The purpose of the current study was to describe the association between a woman's age, perceived social support and parity. The original study conducted by Schiffman and Omar (1994) examined factors related to the adequacy of prenatal care and pregnancy outcome in a not- for- profit center serving low-income women in a southeastern Michigan community. The original study utilized prospective surveys and chart reviews. Instruments were administered at the first or subsequent pre-natal visit and at the six week postpartum visit.

## Sample

The sample for the present study were 65 subjects who completed the two instruments for this study at the postnatal period. In the original study there were 172 subjects: 132 from the Center and 40 from other provider sources in the community offering pre-natal and post-natal care.

## Instruments

Norbeck Social-Support Questionnaire. The Norbeck Social Support Questionnaire (Norbeck et al., 1981) (see Appendix A) was developed to measure multiple dimensions of social support during the prenatal and post-natal period. The Norbeck Social Support Questionnaire has three main variables: total functional support, total network and total loss. The three components of functional support are further divided into subscales. Affect, Affirmation, and Aid are the functional components to be measured. Network components are measured by the number of relationships in the network, duration of relationships and frequency of contact with network members. The last component measures recent losses of network members and support. For purposes of this study, only total functional support was utilized.

The Norbeck Social Support Questionnaire was developed by Norbeck et al., 1981. The three main variables of this instruments originated from Kahn's (1979) conceptual definitions and Barnes (1972) definitions from network theory. Subjects are asked to list each significant person

in their life who provides personal support or is important to them now, and to specify the relationship for each, choosing from a list of nine categories. The question asked are regarding each relationship and subjects are to rate each person in the network on a five-point Likert scale ranging from 1 (not at all) to 5 (great deal).

Norbeck et al. (1981) performed the initial test-retest correlations for functional social support and were reported to be between .85 and .92, and the internal consistency coefficient was .88. Norbeck, Lindsey, and Carrieri (1983) later tested this instrument and found a moderately high level of test-retest reliability over a seven month interval (ranging from .58 to 78). The Marlowe-Crown Test of Social Desirability (Norbeck et al., 1981) ruled out social desirability response bias after obtaining correlations of .01 to .17. Two years later, Norbeck et al. (1983) reported concurrent validity as medium levels of correlation between the Personal Resource Questionnaire (Brandt & Weinert, 1981) which is purported to measure social support, and the NSSQ. Validity of constructs was demonstrated between the NSSQ and two similar interpersonal constructs (need for inclusion and affection), and also through lack of correlation between the NSSQ and construct that was unrelated (need for control).

Center for Epidemiologic Studies Depression Scale (CES-D). The Center for Epidemiologic Studies Depression Scale (CES-D) (Devins & Orme, 1986; Radloff, 1977; Radloff & Locke, 1986) (see Appendix B) is a 20 item instrument

(sixteen items assess depressive symptomatology and four items assess positive affect) self-report scale. On a scale of zero to three, respondents indicate how often (within the last week) they experienced those symptoms: (0) rarely or none of the time (less than one day) to 3) most or all of the time (5-7 days). In the original study, three items that might be influenced by changes of pregnancy rather than depression (Item 2-poor appetite, Item 7-effort, and Item 11-restless sleep) did not demonstrate a different pattern of responses than other items. Current frequency and duration of depressive symptomatology is measured by the CES-D for research within the general, non-psychiatric population. Significant depressive symptomatology is presented as a score of 16 or greater (Radloff, 1977). Internal consistency reliability coefficients have been reported to be .85 or above across varying age, sex and racial groups (Barnes & Prosen, 1984; Hall et al., 1991; Jones-Webb & Snowden, 1993; Radloff, 1977; Radloff & Locke, 1986; Roberts, Andrews, Lewinsohn, and Hops, 1990). Cronbach's alpha coefficients for original study were .87 at the prenatal administration and .92 at the postnatal administration (Schiffman & Omar, 1994).

## Operational Definitions

Perceived Social Support. The dimensions of social support perceived by the pregnant women were operationalized by the functional support components of the NSSQ instrument (Norbeck et al., 1981). The functional components measured

are affect, affirmation, and aid (see Appendix A). Two questions for each component measure the three functional properties of social support. Questions 1 and 2 measure affect, questions 3 and 4 measure affirmation and questions 5 and 6 measure aid.

Scoring is derived from the respondents' ratings for each person in their network in the three functional component subscales. The scores for these subscale items were added together for a total functional score. Low scores indicate low levels of perceived social support and high scores are indicative of higher levels of perceived social support systems.

Age. The variable age was operationalized in two ways: chronological age and by cohorts. The ages of the pregnant women were obtained from the patient records for the original study. For chronological age, the actual age was used. Cohorts were represented as the three different groups. Pregnant women less than or equal to 19 years old constituted the first category, pregnant women between the ages of 20-29 years represented the second category, and the third group consisted of pregnant women greater than or equal to 30 years old.

Parity. For this study the subjects were divided into two groups. The first group consisted of subjects having their first baby and the second group represented women with two or more children.

Depressive Symptomatology in the Postpartum Period. Depressive symptoms in the postpartum period was operationalized by the CES-D (Devins & Orme, 1986; Radloff, 1977; Radloff & Locke, 1986). The subjects were asked to identify the occurrence of depressive symptomatology in the postpartum period. Reverse scoring of the four positive affect was utilized in order to help minimize bias tendencies towards response sets. In the original study, 8 cases had one or two missing responses. These missing responses were randomly distributed across the items, therefore, total scores were calculated for cases with two or fewer missing data. A mean scale score was obtained, after reverse scoring the four positive affect items; this score was then multiplied by 20 (the total number of CES-D items) in order to arrive at a total CES-D score. Scores range from 0-60, with higher scores reflecting greater depressive symptomatology.

## Protection of Human Rights

Approval was obtained from Michigan State University Committee on Research Involving Human Subjects for the original study (see Appendix C). Confidentiality was maintained by allowing only the researcher and thesis professor to review the data. The researcher was not allowed access to distinguishing information about the subjects; subjects were identified by code numbers only. The initiation of data analysis for the present study was conducted after the approval from the University Committee

on Research Involving Human Subjects (UCRIHS) (see Appendix C).

## Data Analysis

The data were analyzed using the Statistical SPSS Program. Frequency distributions for maternal sociodemographic, psychosocial, and physiologic characteristic were calculated. Descriptive statistics related to social support and depressive symptomatology were also calculated for each of the cohorts to help describe these critical characteristics.

The first research question, concerned with the association between perceived social support and depressive symptomatology in the postpartum period, was answered by Pearson's correlation between the mean total score in the postpartum period and the mean total score of the perceived social support scale.

The second question, relating to an association between a women's age and depressive symptomatology in the postpartum period, was answered using analysis of variance to determine if there was any significant effect of age by cohort on total score for depression in the postpartum period. The third question, relating to an association between parity and depressive symptoms in the post-partum period, was also answered using the analysis of variance to determine any effect of parity on total depression scores.

The last research question, about the extent and manner age, parity and perceived social support relate to

depressive symptomatology in the postpartum period, was answered using multiple linear regression analysis. Of interest was the bearing that the predictor variables, chronological age, parity and perceived social support, would have for the criterion variable, postpartum depressive symptomatology.

## Limitations

The following limitations were identified.

1. Utilizing secondary data analysis hinders the interpretation of the variables in this study. Additional data on how the women felt about their age, parity and perceived social support in relationship to the development of postpartum depressive symptomatology would be needed.
2. The use of convenience sampling and lack of ethnic diversity limits generalization of the results to the population.
3. The small size of the sample and the lack of ethnic diversity also limits generalization of the results to the population.
4. The women who did not return for the postpartum visit may be different than the women who did return for the postpartum visit.

## Assumptions

The following assumptions were identified:

1. The answers from the questionnaires are assumed to be truthful without input from others.

2. The data were recorded correctly.

## Results

### Sample

The sample consisted of 65 women who completed the CES-D scale at the postpartum visit. However, only 49 women completed the NSSQ. The subjects were generally in their early twenties (*M*=22.8, *SD*=5.1) , single, caucasian with few having more than a high school education. The majority had experienced at least one prior pregnancy and delivery with a mean of approximately 2 pregnancies (*SD*=1.2). Most of the women were in the two younger age cohort and were almost evenly divided into the two parity groups (Table 1).

### Answers to Research Questions

Research Question 1. Is there an association between women's perceived social support and postpartum depressive symptomatology? The correlation between perceived social support and postpartum depressive symptomatology was not significant (*r*=-.20, *p*=.16). The mean total functional support score was 152 (*SD*=73); the mean CES-D score was 19 (*SD*=12). Perceived social support was not related to depressive symptomatology for the women in this study.

Research Question 2. Is there an association between age and postpartum depressive symptomatology? The second question was analyzed by using analysis of variance to determine if there was any significant effect of age by cohort on total score for depressive symptomatology in the postpartum period. The means and standard deviations for

Table 1.

Frequency and Percent of Sample Characteristics

| Characteristic | Frequency | Percent |
|---|---|---|
| **Age** | | |
| ≤19 | 22 | 33.8 |
| 20-29 | 37 | 56.9 |
| ≥30 | 6 | 9.3 |
| **Parity** | | |
| One | 32 | 49.2 |
| Two or More | 33 | 50.8 |
| **Marital Status** | | |
| Single | 34 | 69.4 |
| Married/Cohabitate | 8 | 16.3 |
| Separated/Divorced | 7 | 14.3 |
| **Race** | | |
| Caucasian | 38 | 77.6 |
| African-American | 10 | 20.4 |
| Hispanic | 1 | 2.0 |
| **Educational Level** | | |
| < High School | 1 | 2.0 |
| Some High School | 17 | 34.7 |
| High School Diploma/GED | 25 | 51.0 |
| Some College | 4 | 8.2 |
| Associate Degree | 1 | 2.0 |

the three groups are represented in (Table 2). All three groups had mean CES-D scores above the cut score of 16. Variability within the groups, for the depressive symptomatology total, was wide. There were no significant differences between the groups (see Table 3).

Research Question 3. Is Depressive Symptomatology in the Postpartum Period dependent upon parity? The third research question was developed to investigate if the

Table 2.

Means, Standard Deviations, and Ranges for Depressive Symptomatology by Age Cohorts

| Cohort | No. | M | SD | Range |
|---|---|---|---|---|
| <19 | 22 | 19.77 | 11.80 | 4-48 |
| 20-29 | 37 | 20.07 | 11.88 | 3-49 |
| ≥30 | 6 | 16.16 | 18.29 | 0-44 |

Table 3.

Analysis of Variance for Depressive Symptomatology in the Postpartum Period by Age Cohorts

| Source | df | M Square | F |
|---|---|---|---|
| Between Groups | 2 | 39.84 | .25 |
| Within Groups | 62 | 156.16 | |
| Total | 64 | | |

occurrence of depressive symptoms in the postpartum period is dependent upon parity. Two groups were used to measure the variable parity. Analysis of variance was also used for this research question to determine if there was any effect of parity on total depressive scores. Both groups had mean CES-D scores above the cut-off score of 16, indicating a moderately low level of depressive symptoms (Table 4). Variance within and between the groups related to depressive symptomatology in the postpartum period was examined for significance (Table 5). There was no significant difference

Table 4.

Means, Standard Deviations for Depressive Symptomatology in the Postpartum Period By Parity Cohorts

| Cohort | No. | M | SD |
|---|---|---|---|
| one child | 32 | 19.87 | 11.53 |
| 2 or more children | 33 | 19.35 | 13.26 |

Table 5.

Analysis of Variance for Depressive Symptomatology in the Postpartum Period by Parity Cohorts

| Source | df | M Square | F |
|---|---|---|---|
| Between Groups | 1 | 4.39 | .03 |
| Within Groups | 63 | 154.90 | |
| Total | 64 | | |

in mean depressive symptoms in the postpartum period between parity groups.

Research Question 4. To what extent and in what manner are women's age, parity and perceived social support related to depressive symptomatology in the postpartum period? The final research question was to determine the extent and the manner women's age, parity and perceived social support were related to depressive symptoms in the postpartum period. Multiple linear regression was used to determine the predictive value of the independent variables, age, parity, and perceived social support on the criterion variable depressive symptomatology in the postpartum period. The

results indicated that the regression model was not significant (Table 6); a small (10%) non significant amount of variance in postpartum depressive symptomatology is explained by age, parity and social support.

## Discussion

### Sample

Sample characteristics from other studies were compared to the sample characteristics in this study. Most studies that identified a positive relationship between the variables in this study included mostly married, middle-class women (Gottlieb et al., 1991; Gottlieb et al., 1995; Logsdon et al., 1994; Stemp et al., 1986). The results of this study are generally inconsistent with other documented studies for the variables age, parity and perceived social support.

In this study, the women's age, parity and perceived social support were not related to depressive symptomatology in the postpartum period. However, women's depressive symptoms scores were on average above the cut score of 16 for CES-D indicating a moderate level of depressive symptoms. There was wide variability in each of these variables. In order to investigate why this study did not yield statistical significant results, the sample, statistical methods and conceptual framework were examined.

Low-income women were investigated in this study. Several studies (Brown, 1986; Collins et al., 1991; Hall et

Table 6.

Analysis of the Effect of Age, Parity, and Perceived Social Support on Depressive Symptomatology in the Postpartum Period

| | |
|---|---|
| Multiple R | 0.32 |
| R Square | 0.10 |
| Adjusted R Square | 0.04 |
| Standard Error | 11.97 |

Analysis of Variance

| | df | Sum of Square | Mean Square |
|---|---|---|---|
| Regression | 3 | 749.77 | 249.92 |
| Residual | 45 | 6448.52 | 143.36 |

F = 1.74 Significance F = .1715

| Variables | B | SE B | 95% Confdnce Intrvl | Beta |
|---|---|---|---|---|
| Age | -.59 | .44 | -1.48 - .29 | .-25 |
| Parity | -.09 | 1.88 | -3.88 - 3.70 | .-01 |
| PSS | -.03 | .02 | -.09 - .02 | .-17 |

al., 1991; O'Hara & Swain, 1996; Unger & Wandersman, 1985) investigated various independent variables of low-income women in relation to depressive symptomatology in the postpartum period. Whereas, other studies (Crnic et al., 1983; Cutrona, 1983; Gennaro, 1988; Gjerdingen & Chaloner, 1994; Hayworth et al., 1980) included only middle-class women as part of their sample demographics. The differences in socioeconomic status is an important factor to assess while comparing literature in relation to this current study of low-income women. The comparison of this studies sample

demographics to other studies may provide a broader view of the impact that low-income women of varying age, parity and social support levels may have on women in relation to depressive symptoms in the postpartum period.

## Social Support and Depressive Symptoms in the Postpartum Period

There was not a statistically significant relationship found between perceived social support and depressive symptoms in the postpartum period but statistically significant relationships are supported both in the literature and by the conceptual framework. Although, significant differences were not found in this study, the direction of correlation was as expected. Higher depressive scores were associated with lower social support scores. This non-significant relationship can be explained by several reasons.

The sample in this study included a homogenous group of young and single women. Although, single women may receive support from multiple others e.g., boyfriend, parents, grandparents, siblings, in this study women's social network was not measured and could not be assessed as a buffer against the occurrence of depressive symptoms. On the other hand, married women may rely only on their spouse for support during the postpartum period, and, if not received then depression is more likely to occur. Again, due to the homogenous sample in this study, the support that married

women perceive in the postpartum period in relation to depressive symptoms was not addressed.

Lack of social support has been shown in the literature to be a predictor of depressive symptoms in the postpartum period (Collins et al., 1993; Logsdon et al., 1994; O'Hara, 1986; O'Hara et al., 1983; Stemp et al., 1986). This research study found a weak and non-significant association between social support and depressive symptoms postpartum. This may be due to the single status of the women in this study, whereas in the above studies, the sample included only married women. Also, social network was included in the operationalization of social support in studies which found a relation to depressive symptoms in the postpartum period (Gjerdingen, 1993; McIntosh, 1993; Stemp et al., 1986).

The findings of this study are supported by the assumptions of the conceptual framework. The conceptual model elucidates a relationship between social support and depressive symptoms in the postpartum period. The impact of social support in women's lives may influence a positive or negative sense of self in the postpartum period. There is an interaction between the sphere of influence (perceived social support) and self-definition which incorporates the development of depressive symptoms in the postpartum period.

Age and Depressive Symptoms in the Postpartum Period

There was no significant difference between the three cohorts on depressive symptoms in the postpartum period.

However, the mean total CES-D scores for each cohort was at or above the cut score and generally increased as age decreased. The women under 30 years old had higher total CES-D scores in the postpartum period than the older women. This could be related to several factors. The homogenous demographics of the sample, and similar life experiences of women regardless of age could explain the lack of significance in this study.

Literature on the subject of women's age and depressive symptoms in the postpartum period is limited in the United States. Previous studies examining age and its relation to depressive symptoms in the postpartum period were conducted by researchers in Europe. Feggetter and Gath (1984), Hayworth et al. (1980), O'Hara et al. (1984), Paykel et al. (1980) found that adolescents were more at risk. Whereas, another study by Kumar and Robson (1984) found that older primiparae were more at risk. Although, a consensus has not been reached in the literature regarding the age at which women may be at risk, the investigation of this variable is suggestive of its potential predictive effects of postpartum depressive symptomatology for all women.

The literature is inconsistent about a relationship between age and depressive symptoms, although there is more evidence that suggests a relationship to younger aged women. Although this study did not yield statistically significant results, the findings from this study would lend some

support to the risk for younger women, i.e., less than 30 years old, who may have higher depressive scores. It should be reiterated that there were few women over 30 years old in this study. The cohorts in this study may have been too broadly defined, and, thus, statistically significant results in relation to age and depressive symptoms could not be found. There was a great deal of variability within each cohort which indicates that the women in this study were more alike than different regarding depressive symptoms regardless of age. Also, due to the homogenous sample of low-income single women in this study, life experiences may be more alike than different irrespective of the age of women.

The flexible outer wall of the conceptual model identifies the importance of socio-historical time for women. At any given point in time in a woman's development, the social, emotional and cultural environments will have an effect on the manner in which a woman defines herself. Perhaps because the circumstances or experiences that each woman face are not known, women ages, may not have been significant in relation to the identification of depressive symptoms in the postpartum period or the women are more alike than different.

Parity and Depressive Symptoms in the Postpartum Period

There were no significant differences between parity groups on depressive symptoms in the postpartum period.

Total mean scores for both groups were above the cut-off score of 16 for depressive symptoms. Similarities in the groups may explain why there were few significant differences in this study.

The literature in the United States that exists regarding parity in relation to depressive symptomatology in the postpartum period is limited. However, a few European researchers found a significant relation between parity and depressive symptoms in the postpartum period but clear differentiation between multiparous and primiparous was not made. So, a comparison of the existing literature regarding parity and depressive symptoms cannot be made to this study.

Bridge et al. (1985) identified low parity as significantly associated with depression at six months postpartum for primiparous women but not at six weeks. As in European studies that found an association between low parity and depression symptoms, women were identified at 6 months postpartum but again not at six weeks. In this study women were assessed at the six week visit only. So, a comparison of the existing literature to this study is similar in regards to the non-significant results in relation to parity and depressive symptoms at the 6 week postpartum period.

In this study, both of the groups had moderately high scores on total CES-D scores regardless of parity therefore, significant differences between the groups were not

identified. Also, there was wide variability within the parity groups, thus, this variable alone cannot explain depressive symptoms in the postpartum period. As with age, the other circumstances of these women's lives may make them more similar than different regardless of the number of children they have.

The conceptual framework for this study identifies the importance of life experiences. Women are faced with varying life experiences and thus can't be grouped into categories based on how many children they have in relation to depressive symptoms in the postpartum period. In this instance, parity may not be the best variable to use for life experiences of women. The varying experiences and responsibilities that each mother encounter during the postpartum period may affect her self-definition.

Relationship of Age, Parity and Perceived Social Support to Depressive Symptoms in the Postpartum Period

The final question assessed the combination of age, parity and perceived social support for their predictive value for depressive symptoms in the postpartum period. The results were not statistically significant. Only 10% of the variance for depressive symptoms in the postpartum period can be explained by age, parity and perceived social support. This is not surprising given the findings for the univariate analyses of the predictor variables. Reasons for these findings are the same as for the variables discussed

independently. Since, no other study in the literature addressed these variables, no comparison to existing knowledge can be made.

The conceptual framework for this study, Women's Self-Definition in Adulthood Model (Peck, 1986) provided a flexible structure for investigation of an issue important to women. A feminist approach is suitable because it represents the multiple roles, responsibilities, and relationships of women's lives in the postpartum period. For this study it provided a guide to discuss the association of the variables age, parity and perceived social support, and depressive symptomatology in the postpartum period. Although, the conceptual framework in this study was not supported by the results of this study, the theoretical model utilized in this study was appropriate.

Although, the conceptual framework utilized in this study was suitable, there was not a fit between the manner in which the variables were operationally and conceptually defined. The variables age, parity and perceived social support were conceptually defined based on the Peck's (1986) model but the variables age and parity did not operationally measure the life experiences of women. Based on the findings of this study, the variables age and parity should be operationally defined and measured in a manner that would reflect the life experiences of women. Although,

objectively including women's age and parity level may yield important information regarding the problem of depressive symptoms, gathering subjective data in relation to the lived experience of women may have been the missing link in this study.

## Implications

In this study, no statistically significant relationship was found between age, parity and perceived social support and depressive symptoms for women in the postpartum period. It appears, therefore, that the variables in this study are limited in their power to predict depressive symptoms in the postpartum period. Although depressive symptomatology in the postpartum period displayed scores on average above the cut-off for depressive symptoms, there was wide variability in all groups. Therefore, the Advance Practice Nurse (APN) should assess all women in the postpartum period for depressive symptomatology.

Although, the variables in this study did not provide a basis to identify factors that predispose women for depressive symptoms postpartum, a need to assess all women individually during the prenatal and postpartum periods is essential. Understanding that the provision of individualized care to all women prenatally until 12 months postpartum may be essential in treating and identifying women who present with depressive symptomatology. Implementing individualized care to all women in the

postpartum, regardless of age, parity and perceived social support, may provide valuable information needed to help women through this period in their lives. The APN in primary care has the opportunity to establish communication with women that will facilitate an understanding of the life experience of women individually during the postpartum period. This subjective information aids in initiating individualized treatment to women in the postpartum period.

In clinical practice, the APN may see women who are risk for depressive symptoms in the postpartum period. Since, the findings of this study did not provide insight to the characteristics that may put women at risk for depressive symptoms, all women would benefit from individual assessments in the prenatal and postpartum periods. Some women may or may not seek help for their depressive symptoms in the postpartum; thus, interventions should be implemented in the prenatal and postpartum periods that may help all women if depressive symptoms occur. The APN in primary care has the opportunity to establish communication with women that will facilitate access to appropriate care for depressive symptoms in the postpartum period, and having office standards instituted that will allow follow-up and case management of all postpartum women will be important. This information aids in initiating treatments such as support groups if appropriate and not already ordered. All patients must be asked if they are involved in parenting support groups because this is a place in which information

can be relayed and gathered during the pospartum period. If not, the APN may suggest the involvement in such activities.

Establishing a rapport with patients in the prenatal period that continues through the 12 month postpartum period encourages communication and continuity of care. If women allow a relationship to develop with the APN, an opportunity for women to share their feelings and experiences in a trusting and caring atmosphere may prevail. APNs may be in a position to build a relationship with women in order to augment their strengths and to facilitate the adjustment to parenthood through education and sharing experiences. Ongoing assessment and communication with women before and after pregnancy is crucial because if depressive symptoms occur, individualized treatment is necessary. APNs in primary care can should look for signs and symptoms of depressive symptoms: frequent crying, irritability, loss of appetite, feelings of panic, and suicidal thoughts.

During routine prenatal visits the APN has the opportunity to educate women regarding signs, symptoms and prevalence of depressive symptoms in the postpartum period. In this study, women at risk for depressive symptoms in the postpartum period was not dependent upon age, parity and perceived social support, thus individualized assessment is crucial. All women need to be well informed about depressive symptoms in the postpartum period. Individual counseling in the office and group programs for parenting sessions in churches, high schools, and local shopping

centers are strategies the APN can use to inform this population of women about depressive symptoms in the postpartum period.

In part, the role of the APN is to help women understand the prevalence of depressive symptomatology in the postpartum period and the need for continual assessment during the postpartum period. In the role as educator/counselor, the APN is able to provide individualized care to all women in the postpartum period. The APN may work with women individually but also in groups depending on the needs of women. Topics to address that are important include, the quality and quantity of support systems that are available, fears and concerns related to their mothering role, integration of one's identity, role changes and how they affect spouses and families, how to negotiate and accept help from families, friends and community support systems, incorporating time to be alone daily, and signs and symptoms of depressive symptoms in the postpartum period. Additionally, the APN may allow husbands, significant others, parents, friends to participate in the care of women because they may need guidance in ways to support women after pregnancy in the event that depressive symptoms occur.

The APN can also work as a case manager/patient advocate which will allow collaboration with other health care professionals and community resources to assist the woman in her recovery from depressive symptoms. In this

study, specific interventions would target the provision of individualized care to all women, regardless of age, parity and perceived social support. Health care professionals who may be included in providing individualized care are: pediatricians, psychiatrists, primary care physicians, public health nurses, hospital-based nurses involved in discharge planning after delivery of a child(ren). Health care professionals and family members need to understand that the birth of a child is not the same for all women. The life experiences of all women must be addressed individually during the postpartum period. Therefore, the ability of the provider to deliver desirable information, skills, emotional support, and reference groups, for women regarding depressive symptoms in the postpartum period is vital. Constant communication with other health care providers involved with the mother's care promotes continuity of care for the mother by reducing activities that are not needed, duplication of needed activities and omission of others.

Community services such as parenting support groups during postpartum visits, special transportation, home visits, and church groups may be needed in order to provide individualized care to women in the prenatal and postpartum periods. The interventions provided from these resources have to render different types of information, in different amounts, and at different times for women in the postpartum period. Women who are experiencing depressive symptoms may

be embarrassed or mentally unable to ask for help thus, continuous follow-up with all women is important. Helping women accept community assistance may involve leading support groups, recruiting and evaluating others to lead support groups sessions and involvement in volunteer work when appropriate.

Implementing inservices for staff at hospitals, prenatal clinics and preparation classes are important for sharing current findings on depressive symptoms in the postpartum period. Because the etiology of depressive symptoms in the postpartum period is unknown, this topic, is at present, neglected in these settings. Discussion about how to identify depressive symptoms in the postpartum period and evaluation of support networks are topics appropriate during and after pregnancy. Although discussion of depressive symptoms in the postpartum period and the importance of supportive interventions for women of all ages and parity levels would unlikely prevent its occurrence; it would at least help to heighten health care professionals awareness about this important issue.

The APN can increase the awareness of the serious consequences from depressive symptoms in the postpartum period for both mother and child. During guest lectures to nursing, medical and allied health students, APNs can render a new understanding of depressive symptoms in the postpartum period to this audience of upcoming health care professionals. Although, the cause of depressive symptoms

in the postpartum period remains an enigma, Stowe and Nemeroff (1995) indicate that clinician's identification and treatment of this illness can be effective.

In this study, age, parity and perceived social support were not predictive of women who are at risk for depressive symptoms in the postpartum period, indicating that other factors may be involved in the occurrence of depressive symptoms besides those investigated in this study. Therefore, health care providers should intervene with all women in the postpartum period. All women are predisposed to the occurrence of postpartum depressive symptomatology; hence, thorough assessments should be performed regardless of age, parity and perceived social support.

Recommendations for Further Research

The results of this study render a need to further investigate the variables of age, parity and social support related to depressive symptomatology of women in the postpartum period because of limitations to represent statistical significance. Although the overall sample size was adequate for this study, sample composition/ characteristics (race, culture, and education level) should be more representative of all women who may present with depressive symptoms in the postpartum period.

Age, described a developmental concept and the life experiences of women, and operationalized by chronological age within the context of cohort did not have a statistically significant correlation with depressive

symptomatology in the postpartum period. The age span of the sample (≤19 to ≥30) is a reasonable representation of the age when women may develop depressive symptoms in the postpartum period. Possibilities for future research using this variable include dividing mothers into separate cohorts in relation to their life experiences or circumstances rather than their age. An understanding of the mother's social-historical time dimension allows the proposition of interventions that are based on the needs of each individual mother. Also, within this age span women could be divided into cohorts based on the perspective of self-identity prenatally and during the postpartum period. These two cohorts, self as mother vs. self as not mother, could represent the activities that women engage in to continue to be themselves within the new context created by motherhood during the postpartum period.

Perceived social support which was operationally defined as functional support was not significantly related to depressive symptoms of women in the postpartum period. Future studies should investigate the availability of total social networks (number of relationships, duration of relationships, and frequency of contact with network members) for women with depressive symptoms in the postpartum period. Also, since there was not an even distribution of married women in this study, including more married women into future studies may yield needed information on this topic. The results of this study

indicated that women possess some type of social network because functional social support was measured but specific questions related to type of relationships with social networks were not utilized in this study. Asking questions specific to relationships that women have will better encompass the social network component.

Low parity has been identified by European researchers as a significant indicator of depressive symptoms in the postpartum period. In this study women did not show a relationship between depressive symptoms and parity at 6 weeks postpartum. The literature in the United States is limited regarding the relationship between depressive symptoms and parity. Including the variable parity into future studies in the United States with respect to the timing of depressive symptoms between primiparous and multiparous women in the postpartum period may prove to other researchers that this is an area that needs attention.

Further research is needed to focus on strategies to evaluate subjective and objective experiences of motherhood. Improving individualized supportive interventions, assessing relationships with social networks, and increasing the number of studies in relation to parity, age, and depressive symptomatology in the United States are areas in which future studies should progress.

## Summary

Depressive symptoms in the postpartum period is an important issue for both the mother and child. Current

literature and research supports the need for early identification, preventive measures, and treatment, of depressive symptoms. Identification of this serious problem in the postpartum period can alleviate suffering for mothers and decrease the potentially harmful impact on her child.

This study concentrated on women's perceptions of social support, age, and parity as variables that affect the occurrence of depressive symptoms in the postpartum period. The effect of age, parity and perceived social support in relation to postpartum depressive symptoms, was not significant in this study. However, women on average had moderate levels of depressive symptoms. Therefore, other factors contributing to depression should be investigated and all women should be assessed for depression during the postpartum period.

# LIST OF REFERENCES

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Affonso, D., Lovett, S., Paul, S. & Sheptak, S. (1990). A standardized clinical interview that differentiates pregnancy and postpartum symptoms from clinical depression, Birth, 17, 121-131.

American Psychiatric Association (1994). Diagnostic and Statistical Manual of Mental Disorder (4th ed.). Washington, DC: APA.

Barnes, J. (1972). Social networks. Reading, MA: Addison-Wesley.

Barnes, G. E., & Prosen, H. (1984). Depression in Canadian general practice attenders. Canadian Journal of Psychiatry, 29, 2-10.

Beck, C. T. (1996). A meta-analysis of predictors of postpartum depression. Nursing Research, 45(5), 201-208.

Beck, C. T. (1995). The effects of postpartum depression on maternal-infant interaction: A Meta-Analysis. Nursing Research, 44, 298-304.

Boyce, P. M., & Stubbs, J. M. (1994). The importance of postnatal depression. The Medical Journal of Australia, 161, 471-472.

Boyce, W. T., Schaeffer, C., & Utti, C. (1985). Permanence and change: Psychosocial factors in the outcome of adolescent pregnancies. Social Science and Medicine, 11, 1279-1287.

Brandt, P. A., & Weinert, C. (1981). The PRQ-a social support measure. Nursing Research, 30(5), 277-280.

Bridge, L. R., Little, B. C., Hayworth,, J., Dewhurst, A., & Priest, S. (1985). Psychometric ante-natal predictors of post-natal depressed mood. Journal of Psychosomatic Research , 29(3), 325-331.

Buesching, D. P., Glasser, M. L., & Frate, D. A. (1986). Progression of depression in the prenatal and postnatal periods. Women and Health, 11(2), 61-78.

Collins, N. L., Dunkel-Schetter, G., Lobel, M., & Scrimshaw, S. C. M. (1993). Social support in pregnancy. American Psychological Association, 65(6), 1243-1258.

Cooper, P. J., & Murray, L. (1995). Course and recurrence of postnatal depression: Evidence for the specificity of the diagnostic concept. British Journal of Psychiatry, 166, 191-195.

Cox, J. L., & Murray, D., & Chapman, G. (1993). A controlled study of the onset, duration, and prevalence of postnatal depression. British Journal of Psychiatry, 163, 27-31.

Crnic, K. A., Greenberg, M. T., Ragozin, A. S., Robinson, N. W., & Basham, R. B. (1983). Effects of stress and social support on mothers and premature and full-term infants. Child Development, 54, 209-217.

Cutrona, C. E. (1986). Behavioral manifestations of social support: The role of social relationships in adaptation. Journal of Personality and Social Psychology, 51, 201-208.

Cutrona, C. E., & Russel, D. W. (1990). Type of social support and specific stress: Toward a theory of optimal matching. In I. G. Sarason, B. R. Sarason, & G. R. Pierce (eds.), Social support: An interactional view (pp. 319-366). New York: Wiley.

Cutrona, C. E. (1984). Social support and stress in the transition to parenthood. American Psychological Association, 93(4), 378-390.

Cutrona, C. E., & Troutman, B. R. (1986). Social support, infant temperament, and parenting self-efficacy: A mediational model of postpartum depression. Child Development, 57, 1507-1518.

Cutrona, C. E. (1983). Causal attributions and perinatal depression. Journal of Abnormal Psychology, 92, 161-172.

Devins, G. M., & Orme, C. M. (1986). Center for Epidemiologic Studies Depression Scale. In D. J. Kayser, & R. C. Sweetland (Eds.), Test critiques (pp.144-160). Kansas City: Test Corporation of America, Inc.

Feggetter, P. & Gath, D. (1981). Non-psychotic psychiatric disorders in women one year after childbirth. Journal of Psychosomatic Research, 25, 369-372.

Gilligan, C. (1982). In a different voice. Cambridge, MA: Harvard University Press.

Gjerdingen, D. K., & Chaloner, K. (1994). Mother's experience with household roles and social support during the first postpartum year. Women and Health, 21(4), 57-74.

Gjerdingen, D. K., & Fontaine, P. (1991). Family-centered postpartum care. Family Medicine, 23, 189-193.

Gotlib, I. A, Whiffen, V., Mount, J., Milne, K., & Cordy, N. (1989). Prevalence rates and demographic characteristics associated with depression in pregnancy and the postpartum. Journal of Consulting and Clinical Psychology, 57, 269-274.

Gotlib, I. A., Whiffen, V. E., Wallace, P. M., & Mount, J. H. (1991). Prospective investigation of postpartum depression: Factors involved in onset and recovery. Journal of Abnormal Psychology, 100(2), 122-132.

Gottlieb, L. N., & Mendelson, M. J. (1995). Mother's moods and social support when a second child is born. Maternal-Child Nursing Journal, 23(1), 3-14.

Hackel, L. S., & Rubel, D. N. (1992). Changes in the marital relationship after the first baby is born: Predicting the impact of expectancy disconfirmation. Journal of Personality and Social Psychology, 62, 944-957.

Hall, L. A., & Farel, A. M. (1988). Maternal stresses and depressive symptoms: Correlates of behavior problems in young children. Nursing Research, 37, 156-161.

Hall, L. A. (1990). Prevelence and correlates of depressive symptoms in mothers of young children. Public Health Nursing, 7(2), 71-79.

Hall, L. A., Williams, C. A., & Greenberg, R. S. (1985). Supports, stressors, and depressive symptoms in low-income mothers of young children. American Journal of Public Health, 75, 518-522.

Hayworth, J., Little, B. C., Cater, S. B., Raptopoulous, P., Priest, R. G., & Sander, M. (1980). A predictive study of post-partum depression: Some predisposing characteristics. British Journal of Medical Psychology, 53, 161-167.

Hopkins, J., Campbell, S. B., & Marcus, M. (1987). Role of infant-related stressors in postpartum depression. Journal of Abnormal Psychology, 96, 237-41.

House, J. S., & Kahn, R. L. (1985). Measures and concepts of social support. In Cohen, S. & Syme, S. L. Social support and health (pp.83-108).

Jarrahi-Zadeh, A., Kane, F. J. Jr., Van De Castle, R. C., Lachenbruch, P. A., & Ewing, J. A. (1969). Emotional and cognitive changes in pregnancy and early puerperium. British Journal of Psychiatry, 115, 797-805.

Jones-Webb, R. J., & Snowden, L. R. (1993). Symptoms of depression among blacks and whites. American Journal of Public Health, 83, 240-244.

Kahn, R. L. (1979). Aging and social support. In M.W. Riley (Ed.), Aging from birth to death: Interdisciplinary perspectives (pp.77-91). Boulder, CO: Westview Press.

Kendell, R. E., Mackenzie, W. E., West, C., McGuire, R. J., & Cox, J. L. (1984). Day to day mood changes after childbirth: Further data. British Journal of Psychiatry, 145, 620-625.

Kennerley, H. (1987). The measurement and investigation of maternity blues. Paper presented at the British Psychological Society Annual Conference: Sussex.

Kemp, V. H., Sibley, D. E., & Pond, E. F. (1990). A comparison of adolescent and adult mothers on factors affecting maternal role attainment. Maternal Child Nursing Journal, 19, 1, 63-74.

Kumar, R., & Robson, K. M. (1984). A prospective study of emotional disorders in childbearing women. British Journal of Psychiatry, 144, 35-47.

Lefton, L. A. (1985). Psychology. (3rd ed.) Boston: Allyn and Bacon, Inc.

Logsdon, M. C., McBride, A. B., & Birkimer, J. C. (1994). Social support and postpartum depression. Research in Nursing and Health, 17, 449-457.

McGrath, E., Keita, G. P., Strickland, B. R., & Russo, N. F. (1990). Women and depression: Risk factors and treatment issues. Washington, D.C.: American Psychological Association.

McIntosh, J. (1993). The experience of motherhood and the development of depression in postnatal period. Journal of Clinical Nursing, 2, 243-249.

Mosby's, Medical, Nursing & Allied Health Dictionary (1995). St. Louis, MO: The C.V. Mosby Company.

Neugarten, B. (1968). Middle age. In B. Neugarten (Ed.), Middle age and aging. Chicago: University of Chicago Press.

Neugarten, B., & Datan, N. (1973). Sociological perspectives on the life cycle. In P. B. Baltes & K. W. Schaie (Eds.), Life-Span developmental psychology (pp.53-68). New York: Academic Press.

Nicholson, P. (1990). Understanding postnatal depression: A mother-centered approach. Journal of Advanced Nursing, 15, 689-695.

Norbeck, J. S., Lindsey, A. M., & Carrieri, V. L.(1981). The development of an instrument to measure social support. Nursing Research, 30,(5), 264-269.

Norbeck, J. S., Lindsey, A., & Carrieri, V. L. (1983). Further development of the Norbeck Social Support Questionnaire: Normative data and validity testing. Nursing Research, 32, 4-9.

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

O'Hara, M. W. (1994). Postpartum depression: Causes and consequences. New York: Springer-Verlag.

O'Hara, M. W., Neunaber, D., & Zekoski, E.(1984). Prospective study of postpartum depression: Prevalence, course, and predictive factors. Journal of Abnormal Psychology, 93, 158-171.

O'Hara, M. W., Zekoski, E. M., Phillips, L. H., & Wright, E. J. (1990). A controlled study of postpartum mood disorders: Comparison of childbearing and non-childbearing women. Journal of Abnormal Psychology, 99, 3-15.

O'Hara, M. W., & Zekoski, E. M. (1986). Postpartum depression: A comprehensive review. In Kumar, R., & Brockington, I. F. (Eds.). Motherhood and mental illness: Causes and consequences.(pp.17-63).

O'Hara, M. W., Rehm, L. P., & Campbell, S. B. (1983). Postpartum depression: A role for social network and life stress variables. Journal of Nervous and Mental Disease, 171, 336-341.

Paykel, E., Emms, E., Fletcher, J., & Rassaby, E. (1980). Life events and social support in puerperal depression. British Journal of Psychiatry, 136, 339-346.

Peck, T. A. (1986). Women's self-definition in adulthood: From a different model? Psychology of Women Quarterly, 10, 274-284.

Philipps, L. H., & O'Hara, M. W. (1991). Prospective study of postpartum depression: 4 ½ year follow-up of women and children. Journal of Abnormal Psychology, 100, 151-155.

Playfair, H. R., & Gowers, J. I. (1981). Depression following childbirth: A search for predictive signs. Journal of the Royal College of General Practitioners, 31, 201-208.

Radloff, L. S. (1977). The CES-D Scale: A new self-report depression scale for research in the general population. Applied Psychological Measurement, 1, 385-401.

Radloff, L. S., & Locke, B. Z. (1986). The community mental health assessment survey and the CES-D Scale. In M. M. Weissman, J. K. Meyers, & C. E. Ross (eds.). Community surveys of psychiatric disorders (pp.177-189). New Brunswick, NJ: Rutgers University Press.

Randell, B. P. (1993). Growth versus stability: Older primiparous women as a paradigmatic case for persistence. Journal of Advanced Nursing, 18, 518-525.

Roberts, R. E., Andrews, J. A., Lewinsohn, P. M., & Hops, H. (1990). Assessment of depression in adolescents using the Center for Epidemiologic Studies Depression Scale. Psychological Assessment: A Journal of Consulting and Clinical Psychology, 2, 122-128.

Rubin, R. (1984). Maternal identity and the maternal experience. New York: Springer.

Schiffman, R. F., & Omar, M. A. (1994). Factors Influencing Pregnancy Outcome at the Center for Healthy Beginnings. Unpublished manuscript.

Stemp, P. S., Turner, R. J., & Noh, S. (1986). Psychological distress in the postpartum period: The significance of social support. Journal of Marriage and the Family, 48, 271-277.

Thoits, P. A. (1982). Conceptual, methodological, and theoretical problems in studying social support as a buffer against life stress. Journal of Health and Social Behavior, 23, 145-153.

Tod, E. D. M. (1964). Puerperal depression: A prospective epidemiological study. Lancet, 2, 1264-1266.

Troutman, B., & Cutrona, C. (1990). Non-psychotic postpartum depression among adolescent mothers. Journal of Abnormal Psychology, 99, 69.

Wasserman, G. A., Brunelli, S. A., & Rauh, V. A. (1990). Social support and living arrangements of adolescent and adult mothers. Journal of Adolescent Research, 5(1), 54-66.

Weiss, R. (1974). The provisions of social relationships. In Z. Rubin (ed.). Doing unto others (pp. 17-26). Englewood Cliffs, NJ: Prentice-Hall.

Whiffen, V. E., & Gotlib, I. H. (1989). Infants of postpartum depressed mothers: Temperament and cognitive status. Journal of Abnormal Psychology, 98, 274-279.

# APPENDICES

# APPENDIX A

## SOCIAL SUPPORT QUESTIONNAIRE

*PLEASE READ ALL DIRECTIONS ON THIS PAGE BEFORE STARTING.*

Please list each significant person in your life on the right. Consider all the persons who provide personal support for you or who are important to you.

Use only first names or initials, and then indicate the relationship, as in the following example:

Example:

| | First Name or Initials | Relationship |
|---|---|---|
| 1. | MARY T. | FRIEND |
| 2. | BOB | BROTHER |
| 3. | M.T. | MOTHER |
| 4. | SAM | FRIEND |
| 5. | MRS. R. | NEIGHBOR |

etc.

Use the following list to help you think of the people important to you, and list as many people as apply in your case.

- spouse or partner
- family members or relatives
- friends
- work or school associates
- neighbors
- health care providers
- counselor or therapist
- minister/priest/rabbi
- other

You do not have to use all 24 spaces. Use as many spaces as you have important persons in your life.

*WHEN YOU HAVE FINISHED YOUR LIST, PLEASE TURN TO PAGE 2.*





Number _____ [1-4]
Date _____

## PERSONAL NETWORK

| | First Name or Initials | Relationship |
|---|---|---|
| 1. | _____ | _____ [32] |
| 2. | _____ | _____ [33] |
| 3. | _____ | _____ [34] |
| 4. | _____ | _____ [35] |
| 5. | _____ | _____ [36] |
| 6. | _____ | _____ [37] |
| 7. | _____ | _____ [38] |
| 8. | _____ | _____ [39] |
| 9. | _____ | _____ [40] |
| 10. | _____ | _____ [41] |
| 11. | _____ | _____ [42] |
| 12. | _____ | _____ [43] |
| 13. | _____ | _____ [44] |
| 14. | _____ | _____ [45] |
| 15. | _____ | _____ [46] |
| 16. | _____ | _____ [47] |
| 17. | _____ | _____ [48] |
| 18. | _____ | _____ [49] |
| 19. | _____ | _____ [50] |
| 20. | _____ | _____ [51] |
| 21. | _____ | _____ [52] |
| 22. | _____ | _____ [53] |
| 23. | _____ | _____ [54] |
| 24. | _____ | _____ [55] |

[5-6]

Number _____ [1-4]
Date _____

## PERSONAL NETWORK

| | First Name or Initials | Relationship | |
|---|---|---|---|
| 1. | _____ | _____ | [32] |
| 2. | _____ | _____ | [33] |
| 3. | _____ | _____ | [34] |
| 4. | _____ | _____ | [35] |
| 5. | _____ | _____ | [36] |
| 6. | _____ | _____ | [37] |
| 7. | _____ | _____ | [38] |
| 8. | _____ | _____ | [39] |
| 9. | _____ | _____ | [40] |
| 10. | _____ | _____ | [41] |
| 11. | _____ | _____ | [42] |
| 12. | _____ | _____ | [43] |
| 13. | _____ | _____ | [44] |
| 14. | _____ | _____ | [45] |
| 15. | _____ | _____ | [46] |
| 16. | _____ | _____ | [47] |
| 17. | _____ | _____ | [48] |
| 18. | _____ | _____ | [49] |
| 19. | _____ | _____ | [50] |
| 20. | _____ | _____ | [51] |
| 21. | _____ | _____ | [52] |
| 22. | _____ | _____ | [53] |
| 23. | _____ | _____ | [54] |
| 24. | _____ | _____ | [55] |

[5-6]

For each person you listed, please answer the following questions by writing in the number that applies.

1 = not at all
2 = a little
3 = moderately
4 = quite a bit
5 = a great deal

| Question 1: How much does this person make you feel liked or loved? | Question 2: How much does this person make you feel respected or admired? |
|---|---|
| 1. _____ | 1. _____ |
| 2. _____ | 2. _____ |
| 3. _____ | 3. _____ |
| 4. _____ | 4. _____ |
| 5. _____ | 5. _____ |
| 6. _____ | 6. _____ |
| 7. _____ | 7. _____ |
| 8. _____ | 8. _____ |
| 9. _____ | 9. _____ |
| 10. _____ | 10. _____ |
| 11. _____ | 11. _____ |
| 12. _____ | 12. _____ |
| 13. _____ | 13. _____ |
| 14. _____ | 14. _____ |
| 15. _____ | 15. _____ |
| 16. _____ | 16. _____ |
| 17. _____ | 17. _____ |
| 18. _____ | 18. _____ |
| 19. _____ | 19. _____ |
| 20. _____ | 20. _____ |
| 21. _____ | 21. _____ |
| 22. _____ | 22. _____ |
| 23. _____ | 23. _____ |
| 24. _____ | 24. _____ |

*GO ON TO NEXT PAGE*

[7-9] [10-12]

Number _____ [1-4]
Date _____

1 = not at all
2 = a little
3 = moderately
4 = quite a bit
5 = a great deal

## PERSONAL NETWORK

| | First Name or Initials | Relationship | |
|---|---|---|---|
| 1. | | | [32] |
| 2. | | | [33] |
| 3. | | | [34] |
| 4. | | | [35] |
| 5. | | | [36] |
| 6. | | | [37] |
| 7. | | | [38] |
| 8. | | | [39] |
| 9. | | | [40] |
| 10. | | | [41] |
| 11. | | | [42] |
| 12. | | | [43] |
| 13. | | | [44] |
| 14. | | | [45] |
| 15. | | | [46] |
| 16. | | | [47] |
| 17. | | | [48] |
| 18. | | | [49] |
| 19. | | | [50] |
| 20. | | | [51] |
| 21. | | | [52] |
| 22. | | | [53] |
| 23. | | | [54] |
| 24. | | | [55] |

[5-6]

| Question 3: How much can you confide in this person? | Question 4: How much does this person agree with or support your actions or thoughts? |
|---|---|
| 1. _____ | 1. _____ |
| 2. _____ | 2. _____ |
| 3. _____ | 3. _____ |
| 4. _____ | 4. _____ |
| 5. _____ | 5. _____ |
| 6. _____ | 6. _____ |
| 7. _____ | 7. _____ |
| 8. _____ | 8. _____ |
| 9. _____ | 9. _____ |
| 10. _____ | 10. _____ |
| 11. _____ | 11. _____ |
| 12. _____ | 12. _____ |
| 13. _____ | 13. _____ |
| 14. _____ | 14. _____ |
| 15. _____ | 15. _____ |
| 16. _____ | 16. _____ |
| 17. _____ | 17. _____ |
| 18. _____ | 18. _____ |
| 19. _____ | 19. _____ |
| 20. _____ | 20. _____ |
| 21. _____ | 21. _____ |
| 22. _____ | 22. _____ |
| 23. _____ | 23. _____ |
| 24. _____ | 24. _____ |
| [13-15] | [16-18] |

*GO ON TO NEXT PAGE*

1 = not at all
2 = a little
3 = moderately
4 = quite a bit
5 = a great deal

Question 5:

If you needed to borrow $10, a ride to the doctor, or some other immediate help, how much could this person usually help?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[10-21]

Question 6:

If you were confined to bed for several weeks, how much could this person help you?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[22-24]

*GO ON TO NEXT PAGE*

Number _____ [1-4]
Date _____

## PERSONAL NETWORK

| | First Name or Initials | Relationship | |
|---|---|---|---|
| 1. | _____ | _____ | [32] |
| 2. | _____ | _____ | [33] |
| 3. | _____ | _____ | [34] |
| 4. | _____ | _____ | [35] |
| 5. | _____ | _____ | [36] |
| 6. | _____ | _____ | [37] |
| 7. | _____ | _____ | [38] |
| 8. | _____ | _____ | [39] |
| 9. | _____ | _____ | [40] |
| 10. | _____ | _____ | [41] |
| 11. | _____ | _____ | [42] |
| 12. | _____ | _____ | [43] |
| 13. | _____ | _____ | [44] |
| 14. | _____ | _____ | [45] |
| 15. | _____ | _____ | [46] |
| 16. | _____ | _____ | [47] |
| 17. | _____ | _____ | [48] |
| 18. | _____ | _____ | [49] |
| 19. | _____ | _____ | [50] |
| 20. | _____ | _____ | [51] |
| 21. | _____ | _____ | [52] |
| 22. | _____ | _____ | [53] |
| 23. | _____ | _____ | [54] |
| 24. | _____ | _____ | [55] |

[56]

Number _____ [1-4]
Date _____

## PERSONAL NETWORK

| | First Name or Initials | Relationship | Question 7: How long have you known this person? (1 = less than 6 months, 2 = 6 to 12 months, 3 = 1 to 2 years, 4 = 2 to 5 years, 5 = more than 5 years) | Question 8: How frequently do you usually have contact with this person? (Phone calls, visits, or letters) (5 = daily, 4 = weekly, 3 = monthly, 2 = a few times a year, 1 = once a year or less) |
|---|---|---|---|---|
| 1. | _____ | _____ [32] | _____ | _____ |
| 2. | _____ | _____ [33] | _____ | _____ |
| 3. | _____ | _____ [34] | _____ | _____ |
| 4. | _____ | _____ [35] | _____ | _____ |
| 5. | _____ | _____ [36] | _____ | _____ |
| 6. | _____ | _____ [37] | _____ | _____ |
| 7. | _____ | _____ [38] | _____ | _____ |
| 8. | _____ | _____ [39] | _____ | _____ |
| 9. | _____ | _____ [40] | _____ | _____ |
| 10. | _____ | _____ [41] | _____ | _____ |
| 11. | _____ | _____ [42] | _____ | _____ |
| 12. | _____ | _____ [43] | _____ | _____ |
| 13. | _____ | _____ [44] | _____ | _____ |
| 14. | _____ | _____ [45] | _____ | _____ |
| 15. | _____ | _____ [46] | _____ | _____ |
| 16. | _____ | _____ [47] | _____ | _____ |
| 17. | _____ | _____ [48] | _____ | _____ |
| 18. | _____ | _____ [49] | _____ | _____ |
| 19. | _____ | _____ [50] | _____ | _____ |
| 20. | _____ | _____ [51] | _____ | _____ |
| 21. | _____ | _____ [52] | _____ | _____ |
| 22. | _____ | _____ [53] | _____ | _____ |
| 23. | _____ | _____ [54] | _____ | _____ |
| 24. | _____ | _____ [55] | _____ | _____ |

[56]

*PLEASE BE SURE YOU HAVE RATED EACH PERSON ON EVERY QUESTION. GO ON TO THE LAST PAGE.*

PAT ID5 ___
1 2 3
0 5
4 5

CES-D Scale (A)

Circle the number for each statement which best describes how often you felt or behaved this way — DURING THE PAST WEEK.

| DURING THE PAST WEEK: | Rarely or None of the Time (Less than 1 Day) | Some or a Little of the Time (1-2 Days) | Occasionally or a Moderate Amount of Time (3-4 days) | Most or All of the Time (5-7 Days) | |
|---|---|---|---|---|---|
| 1. I was bothered by things that usually don't bother me | 0 | 1 | 2 | 3 | (6) |
| 2. I did not feel like eating; my appetite was poor | 0 | 1 | 2 | 3 | (7) |
| 3. I felt that I could not shake off the blues even with the help from my family and friends | 0 | 1 | 2 | 3 | (8) |
| 4. I felt that I was just as good as other people | 0 | 1 | 2 | 3 | (9) |
| 5. I had trouble keeping my mind on what I was doing | 0 | 1 | 2 | 3 | (10) |
| 6. I felt depressed | 0 | 1 | 2 | 3 | (11) |
| 7. I felt that everything I did was an effort | 0 | 1 | 2 | 3 | (12) |
| 8. I felt hopeful about the future | 0 | 1 | 2 | 3 | (13) |
| 9. I thought my life had been a failure | 0 | 1 | 2 | 3 | (14) |
| 10. I felt fearful | 0 | 1 | 2 | 3 | (15) |
| 11. My sleep was restless | 0 | 1 | 2 | 3 | (16) |
| 12. I was happy | 0 | 1 | 2 | 3 | (17) |
| 13. I talked less than usual | 0 | 1 | 2 | 3 | (18) |
| 14. I felt lonely | 0 | 1 | 2 | 3 | (19) |
| 15. People were unfriendly | 0 | 1 | 2 | 3 | (20) |
| 16. I enjoyed life | 0 | 1 | 2 | 3 | (21) |
| 17. I had crying spells | 0 | 1 | 2 | 3 | (22) |
| 18. I felt sad | 0 | 1 | 2 | 3 | (23) |
| 19. I felt that people disliked me | 0 | 1 | 2 | 3 | (24) |
| 20. I could not get "going" | 0 | 1 | 2 | 3 | (25) |

# APPENDIX B

FAX TRANSMITTAL MEMO

TO: SHEILA HENRY

DEPT. _____ FAX #: 39553

FROM: UCRIHS PHONE: _____

CO: _____ FAX #: _____

NO. OF PAGES: 1

MICHIGAN STATE UNIVERSITY

April 24, 1997

TO: Rachel F. Schiffman
A230 Life Sciences

RE: IRB#: 97-279
TITLE: THE ASSOCIATION BETWEEN AGE, PARITY AND PERCEIVED SOCIAL SUPPORT TO POSTPARTUM DEPRESSIVE SYMPTOMATOLOGY
REVISION REQUESTED: N/A
CATEGORY: 1-B
APPROVAL DATE: 04/23/97

The University Committee on Research Involving Human Subjects' (UCRIHS) review of this project is complete. I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project and any revisions listed above.

RENEWAL: UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Investigators planning to continue a project beyond one year must use the green renewal form (enclosed with the original approval letter or when a project is renewed) to seek updated certification. There is a maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for complete review.

REVISIONS: UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the green renewal form. To revise an approved protocol at any other time during the year, send your written request to the UCRIHS Chair, requesting revised approval and referencing the project's IRB # and title. Include in your request a description of the change and any revised instruments, consent forms or advertisements that are applicable.

PROBLEMS/ CHANGES: Should either of the following arise during the course of the work, investigators must notify UCRIHS promptly: (1) problems (unexpected side effects, complaints, etc.) involving human subjects or (2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved.

If we can be of any future help, please do not hesitate to contact us at (517)355-2180 or FAX (517)432-1171.

Sincerely,

David E. Wright, Ph.D.
UCRIHS Chair

DEW:bed

cc: Sheila M. Henry

OFFICE OF RESEARCH AND GRADUATE STUDIES
University Committee on Research Involving Human Subjects (UCRIHS)
Michigan State University
246 Administration Building
East Lansing, Michigan 48824-1046
517/355-2180
FAX: 517/432-1171

# APPENDIX C

MICHIGAN STATE UNIVERSITY

OFFICE OF VICE PRESIDENT FOR RESEARCH
AND DEAN OF THE GRADUATE SCHOOL

EAST LANSING • MICHIGAN • 48824-1046

March 19, 1992

Mildred A. Omar, Ph.D.
Rachel F. Schiffman, Ph.D.
A-230 Life Sciences Bldg.

RE: FACTORS INFLUENCING PREGNANCY OUTCOME, IRB #92-115

Dear Drs. Omar and Schiffman:

The above project is exempt from full UCRIHS review. One of the Committee's members has reviewed the proposed research protocol and finds that the rights and welfare of human subjects appear to be protected. You have approval to conduct the research.

You are reminded that UCRIHS approval is valid for one calendar year. If you plan to continue this project beyond one year, please make provisions for obtaining appropriate UCRIHS approval one month prior to March 16, 1993.

Any changes in procedures involving human subjects must be reviewed by the UCRIHS prior to initiation of the change. UCRIHS must also be notified promptly of any problems (unexpected side effects, complaints, etc.) involving human subjects during the course of the work.

Thank you for bringing this project to our attention. If we can be of any future help, please do not hesitate to let us know.

Sincerely,

David E. Wright, Ph.D.
Chair, UCRIHS

DEW/pjm

MICHIGAN STATE UNIVERSITY

OFFICE OF VICE PRESIDENT FOR RESEARCH
AND DEAN OF THE GRADUATE SCHOOL

EAST LANSING • MICHIGAN • 48824-1046

March 2, 1993

TO: Rachel Schiffman, Ph.D.
Mildred Omar, Ph.D.
A230 Life Sciences

RE: **IRB #:** 92-115
**TITLE:** FACTORS INFLUENCING PREGNANCY OUTCOME
**CATEGORY:** 1-C
**REVISION REQUESTED:** February 23, 1993
**APPROVAL DATE:** March 1, 1993

The University Committee on Research Involving Human Subjects' (UCRIHS) review of this project is complete. I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project including any revision listed above.

UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Investigators planning to continue a project beyond one year must seek updated certification. Request for renewed approval must be accompanied by all four of the following mandatory assurances.

1. The human subjects protocol is the same as in previous studies.
2. There have been no ill effects suffered by the subjects due to their participation in the study.
3. There have been no complaints by the subjects or their representatives related to their participation in the study.
4. There has not been a change in the research environment nor new information which would indicate greater risk to human subjects than that assumed when the protocol was initially reviewed and approved.

There is a maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for complete review.

UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. Investigators must notify UCRIHS promptly of any problems (unexpected side effects, complaints, etc.) involving human subjects during the course of the work.

If we can be of any future help, please do not hesitate to contact us at (517) 355-2180 or FAX (517) 336-1171.

Sincerely,

David E. Wright, Ph.D.
UCRIHS Chair

DEW:pjm